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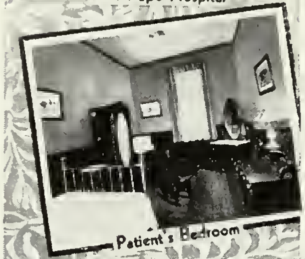
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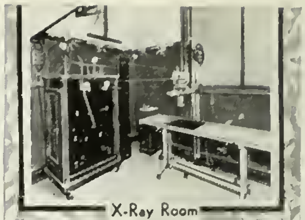
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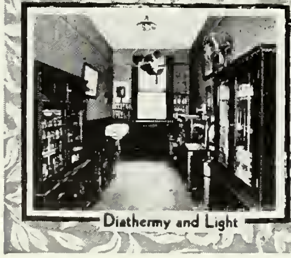
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Volume XXV JANUARY, 1932 No. 1

RECONSTRUCTIVE MEASURES IN UROLOGICAL SURGERY*

Russell A. Hennessey, M.D., F.A.C.S., and Alfred D. Mason, M.D., Memphis

IN urology, as in other fields of surgery, plastic or reconstructive measures are being designed and applied to restore or repair a partially useful organ. In presenting a few examples of this type of surgery, it is our intention to further demonstrate the feasibility of such practices in selected cases. Developmental defects, injuries, and conditions related to impaired drainage most frequently offer opportunities for such efforts at conservation.

Renal Lesions

The literature contains numerous examples of ingenious methods of relieving obstructive lesions at the uretero-pelvic juncture, but to Quinby and Von Lichtenberg a great deal of credit is due for arousing general interest in plastic procedures upon the kidney pelvis and ureter. Quinby, in dealing with hydronephrosis resulting from the effect of an abnormal blood supply, recommends division of the ureter at the ureteropelvic juncture with reimplantation into the most dependent part of the kidney pelvis. He states that such anomalies are end arteries, and that their ligation may produce necrosis of kidney tissue and impaired renal function. It is his opinion also that in addition to the effect of the anomalous blood vessel producing angulation and impaired drainage that the proximity of a pulsating vessel is sufficient in its stimulating effect to disturb the dynamics of the ureter.

Von Lichtenberg advises the division and reimplantation of the ureter in cases of stricture at the uretero-pelvic juncture and in cases of abnormal implantation of the ureter. He also advises, in the accomplishment of this procedure, the placing of a small catheter through the line of suture and out through a nephrostomy opening at the site of the lower major calyx.

We herewith present the positive findings, and outline of treatment in three cases in which plastic operations were done upon the kidney pelvis for the correction of developmental or mechanical defects producing hydronephrosis.

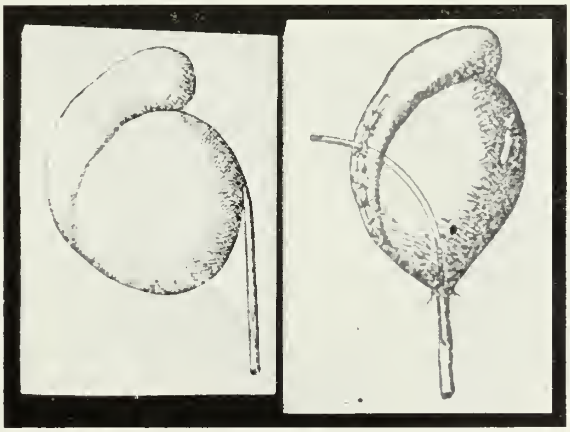

Fig. VI. Method of repair in faulty implantation of ureter and ureteropelvic stricture used by Von Lichtenberg.

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*Read before the Tennessee State Medical Association, Knoxville, April 14-15, 1931.

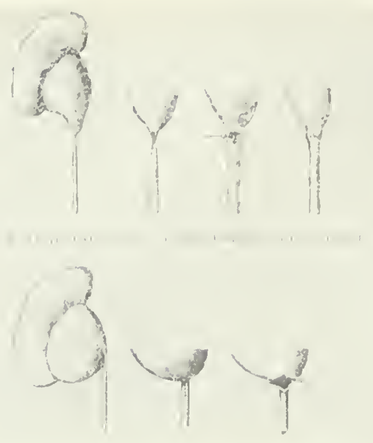

Fig. V. Fenger's method of repair of stricture at ureteropelvic juncture.

Case Reports

1. Mrs. E. E. S.—Female, married, housewife.

Urological History—Had frequency of urination for many years. Past three years much gas, attacks of nausea and indigestion, necessitating very limited diet. Eight months ago, attack of pyelitis with dull aching pain in region of left upper abdomen.

Examination—Soreness over both kidneys. Cystoscopy on admission: Stricture of urethra which had to be dilated with sounds. Bladder showed base and trigone to be site of marked chronic and subacute cystitis, with cystitis cystica. Ureteral orifies appeared normal, with clear urine from both. No. 6 catheter to both pelves. P. S. P. good concentration in two minutes from right, and did not appear in twenty minutes from left. Cystoscopy five days later: Function from left kidney improved. Catheter passed into left kidney pelvis. Cystoscopy eighteen days after operation: Bladder normal. Left ureter catheterized. P. S. P. appeared in eight minutes in poor concentration.

X-ray on Admission—Left pyelo-ureterogram shows an enormous dilatation of kidney pelvis as well as all calices. Left ureter irregularly dilated throughout.

Laboratory—Urine: Neutral, 1011, albumin faint trace, sugar negative, pus cells 4-5 high power field, blood negative, bacteria abundant. White blood count 7,000. Right kidney: Red blood cells 3-5 high power field, rare pus, P. S. P. (fifteen minutes) 35 c.c., 18 per cent. Left kidney: Numerous bacteria, numerous red blood cells, pus 2-3 per high power field, P. S. P. 5 c.c., 0 per cent.

Operation—Ethylene anesthesia. Left flank incision with exposure of kidney. Pelvis exposed and freed of adhesions. Kidney pelvis markedly dilated with marked angulation and atresia at uretero-pelvic juncture. U-shaped incision made in most dependent portion of pelvis, and anastomosed to adjacent portion of upper ureter.

Result—Complete clinical relief. Much gain in weight; able to eat nearly all foods without digestive disturbance. Subsequent examination six months later shows slight reduction in size of kidney pelvis and improved kidney function.

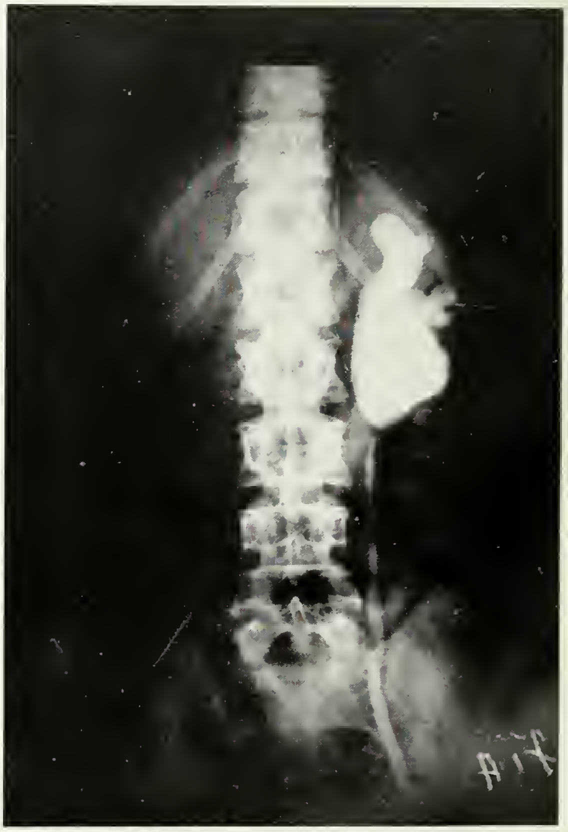

Fig. IV A. Preoperative pyelogram showing marked hydronephrosis due to stricture and anomalous vessel at ureteropelvic junction.

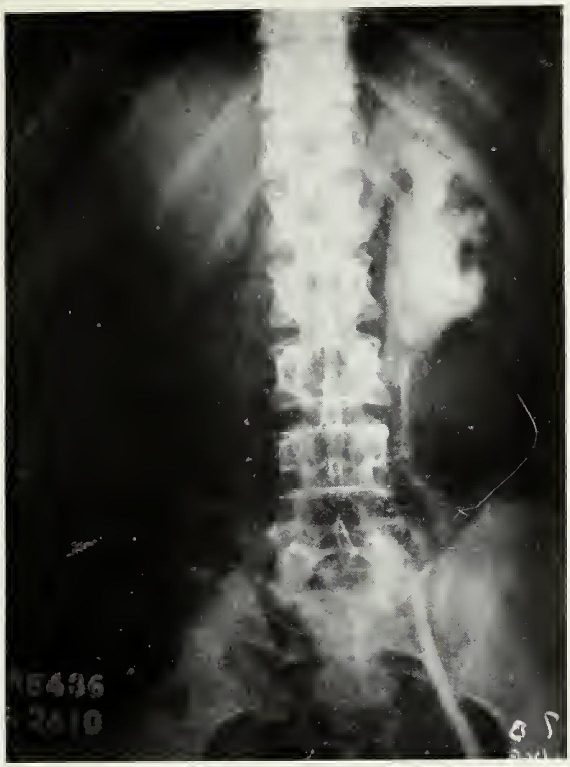

Fig. IV B. Post-operative pyeloureterogram showing correction of deformity at ureteropelvic juncture.

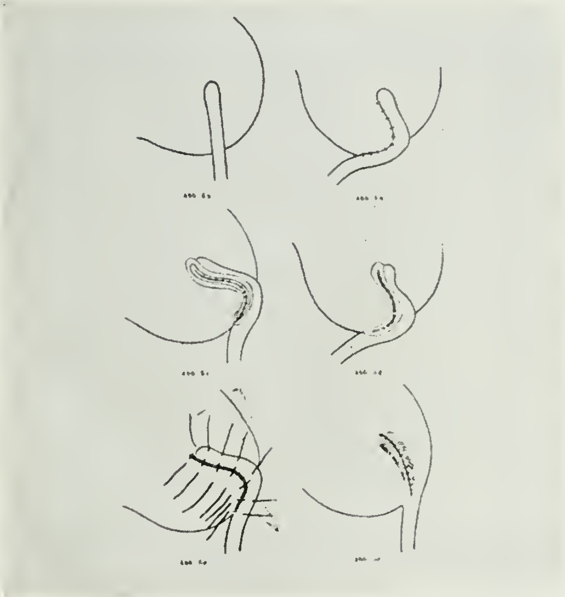

Fig. II. Von Lichtenberg's method of uretero pyeloneostomy.

2. Mrs. C. M. M.—Female, married, 33, housewife.

Urological History—For past ten years has been having intermittent attacks of fever, rigors, dysuria, frequency and nocturia. Worse since pelvic laparotomy two years ago. After this operation patient had continuous fever for fourteen months, fever higher in afternoon and associated with bladder symptoms.

Examination—Both kidneys palpable and tender. Right is larger than the left.

Cystoscopy—On admission: Bladder shows subacute diffuse cystitis with considerable coarse trabeculation in vault of bladder. Inflammatory reaction typical of tuberculous infection. P. S. P. appears in four minutes from left side and in good concentration, and six minutes from right in poor concentration. Unsuccessful attempts to pass stricture in left ureter on the seventh, ninth and twelfth day. Fourteen days after operation, catheter was easily passed to left kidney, and pyelogram made.

Laboratory—Urine: 1010, acid, albumin one plus, sugar negative, innumerable pus cells, occasional red blood cell. White blood count, 16,600, polys 80 per cent, small lymphocytes 15 per cent, large lymphocytes 2 per cent, large monuclears 1 per cent, myelocytes 2 per cent. Red blood count, 3,150,000. Hemoglobin 60 per cent. Urine from right kidney: innumerable pus cells, numerous red blood cells, bacteria. P. S. P. too faint to estimate. Urine from left kidney: many pus cells, many red blood cells, bacteria. P. S. P. 7.5 per cent. Tb. negative from both kidneys. Cultures: staphylococcus and streptococcus from both kidneys. Combined P. S. P.: first hour 16.6 per cent, second hour 15.8 per cent.

X-ray—Right pyelogram showed collections of media more or less rounded in shape extending out in cortex of right kidney, evidencing extensive renal damage. Pelvis not well outlined. Attempt at left pyelogram showed left ureter dilated with marked angulation at upper third. No injected media entered left kidney pelvis. Uroselectan intravenously: Insufficient secretion and concentration to be able to evaluate either kidney function or pelvic outline. Left pyelo-ureterogram after operation showed a marked deformity of the pelvic contour; however, the irregularity was an even, smooth nature, as might be suspected from pressure encroachment. Left ureter shows irregular dilatation throughout.

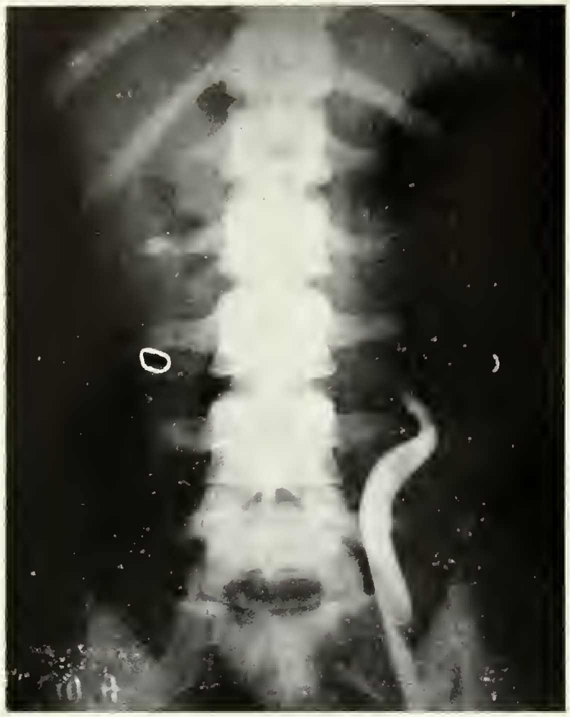

Fig. III A. Ureterogram showing obstruction at uretero pelvic juncture.

Operation—Left flank incision. Kidney exposed and drawn forward. The kidney, which was probably twice its normal size, was fixed in dense perirenal adhesions. Ureter exposed and found to be sharply angulated and fixed in adhesions. Adhesions divided and ureter straightened. Fat transplants were placed over the denuded ureter. Incision closed in layers.

Result—Drainage from left kidney pelvis improved, but infection persisted and renal function was only slightly improved, due to the extensive renal damage prior to operation and complete destruction of right kidney.

3. Mr. F. S.—Male, age 18, student.

Urological History—Intermittent attacks of pain in right flank for past three years. The attacks have become more frequent and severe recently and are accompanied by nausea and occasional vomiting. In the interim the patient experiences some dull aching pain in the flank.

Examination—Negative, except for pain and tenderness on palpation over the right

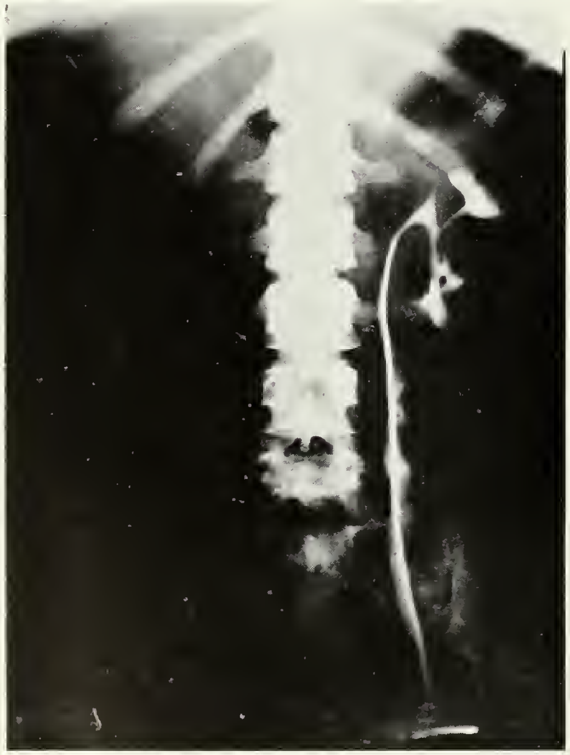

Fig. III B. Post-operative pyeloureterogram showing relief of obstruction and marked kidney damage.

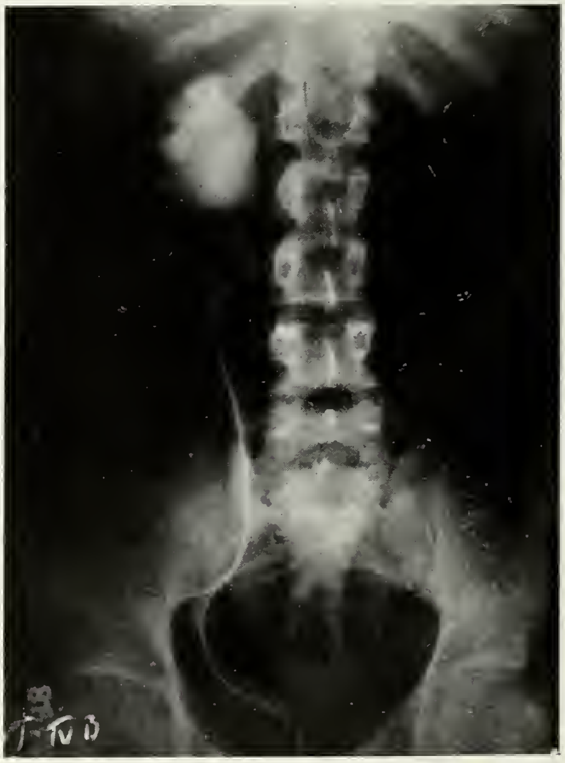

Fig. I A. Pyelogram showing marked hydronephrosis before uretero-pyeloneostomy.

kidney area. The urine and blood were normal. Cystoscopy revealed a normal bladder. Catheter passed into both ureters and a marked right renal retention found. P. S. P. appeared from the left ureter in three minutes, and from the right ureter in twenty minutes in poor concentration. A pyelo-ureterogram revealed a large right hydronephrosis.

Operation—At operation a small vessel was found crossing the ureter at the uretero-pelvic juncture, at which point periureteral and peripelvic adhesions were found to be increasing the obstruction. The vessel was ligated and cut and the adhesions stripped. A longitudinal incision through the uretero-pelvic juncture with transverse suturing was done. A small drainage tube was employed and removed four days later.

Result—Complete clinical relief. Subsequent examination reveals improved function and reduction in size of pelvis.

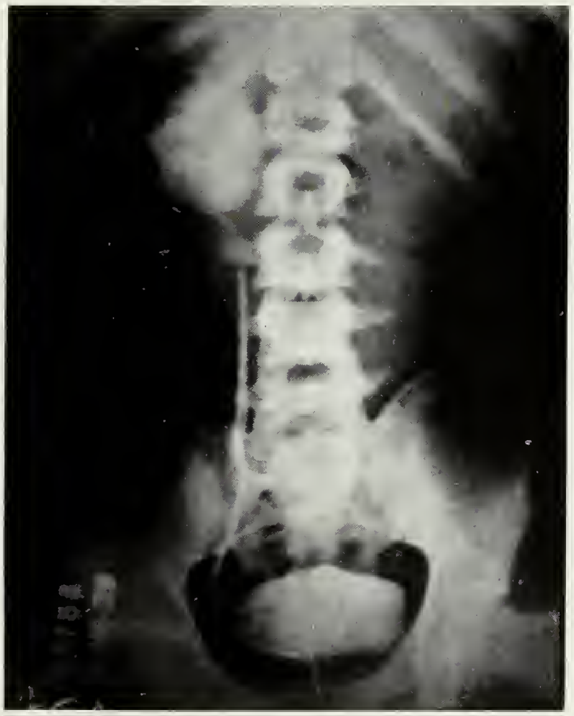

Fig. I B. Post-operative pyelogram showing relief of obstruction at ureteropelvic juncture, and decrease in size of kidney pelvis.

URETERAL LESIONS

Conservation of renal function through repair of injuries to the ureter has apparently been dependent upon the advent of a proper surgical technique. McArthur, in 1925, presented a technique for repair of the ureter modeled after a method used in reconstruction of the common bile duct. This method involved the use of an inlying bougie inserted into the ureter at a point above the line of anastomosis, over which the ureter was sutured. A second catheter was passed upward into the kidney pelvis, although, as Iselin has shown, this attempt at drainage is not necessary, since the plugging of the ureter with the inlying bougie suffices to divert the urinary stream. It has been found through experimental research that the ureter lends itself well to plastic procedures. The principle requirement appears to be dependent upon careful coaptation of the ureter in order to lessen the degree of scar formation and stenosis at the line of suture. Failure in attempts at anastomosis of the ureter in most instances are due to obstruction to the outflow of urine and the interruption of peristalsis.

CASE REPORTS

1. Mrs. D. C.,* age 54 years, was first seen December 18th, 1926, because of pain in the left hypochondrium, chills, fever, and frequent, painful micturition. Her complaint began two days before, following a cystoscopic examination, at which time the left ureter was dilated.

The patient had suffered attacks of bladder trouble for three and one-half years. The right breast had been removed for malignancy six years before and the left one three years later.

A deep, diffuse, brawny induration was found in the left hypochondrium adjacent to the anterior iliac crest and extending backward into the flank. The temperature was 101.6 F. The blood count showed 3,800,000 red cells and 16,200 leucocytes with 86 per cent polymorphonuclears. Cystoscopic examination showed a diffuse subacute cystitis. The left ureteral orifice was edematous. An occasional feeble contraction of the left ureter was seen, but no urine was ejected. Indigocarmine failed to appear from the left orifice in twenty minutes. The appearance time and concentration were normal for the right kidney.

Under nitrous oxide and oxygen anesthesia, an incision was made over the left iliac crest. Beneath the muscles a large pocket of urine was released, drainage tubes were inserted and the incision closed. The tubes were removed in six days, after which an active urinary fistula persisted. The improvement of the patient was rapid. Two weeks later indigocarmine given intravenously appeared in five minutes from the fistulous tract in good concentration. Although nephrectomy seemed imminent, it was determined to attempt an ureteral repair. An ureteral catheter was passed about 18 cm. from below to aid in identifying the ureter. Through a liberal flank incision, the upper ureter was followed from the kidney pelvis and isolated. The lower ureter was identified and mobilized. Through a vertical incision in the dilated upper ureter a bougie was passed downward and into the lower ureter. A large ureteral catheter was passed upward through this incision into the kidney pelvis. The divided ureter (the separation of the ureter was most probably made complete during dissection in the dense scar tissue), was sutured end-to-end with two fine catgut sutures over the inlying bougie. The tube draining the kidney pelvis was removed on the fifth day and the inlying bougie two days later. There was considerable drainage from the incision for three weeks, but the amount of urine decreased gradually after the eighth day. Healing was complete in thirty-two days. Dilatation of the ureter with No. 9 and No. 11 Garceau catheters has been carried out at intervals since. A recent determination of the functional capacity showed a phthalein return in three minutes from both sides, and an output of 14 per cent and 12 per cent from the right and left sides, respectively.

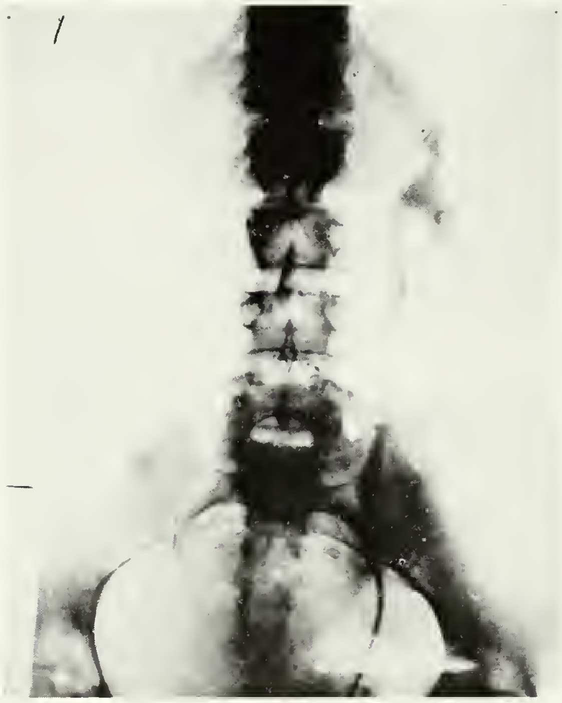

Fig. VII. Left ureterogram showing urethral fistula.

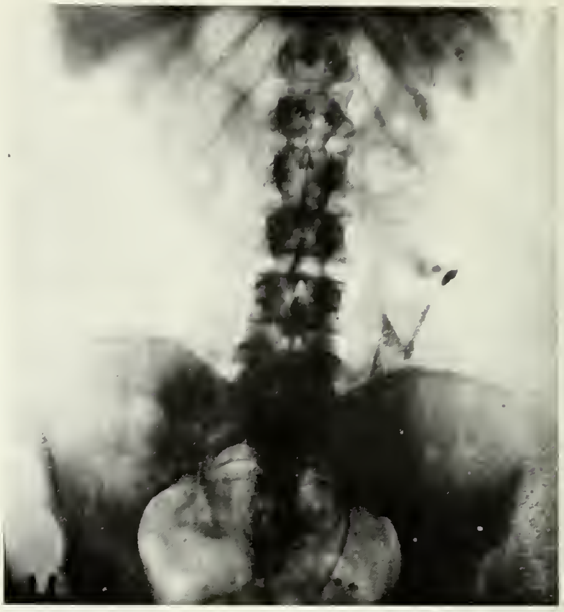

Fig. VIII. Left pyeloureterogram after successful ureteral anastomosis.

2. Dr. G. H. W., 36, male, married. This patient was admitted to the hospital May 18th, 1927, in a state of profound sepsis. He experienced constant dribbling of urine, which necessitated the use of an incontinence apparatus. The impulse to void was frequent and could not be controlled. The

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*This case previously reported in the Southern Medical Journal, Vol. xxiii.

urinary difficulty had been present to some degree for the past twenty-five years, following a severe blow in the perineum. Some perineal abscesses subsequently developed, requiring incision and drainage. Previous attempts to pass sounds were unsuccessful and followed on several occasions by considerable hemorrhage. For ten days before admission, the patient had repeated chills and temperature rise to 104 F.

Examination—Extensive scarring in perneum. Dribbling of urine from urethra. Attempts to pass catheter or other urethral instruments was followed by chills, high fever and an elevation of the blood urea on several occasions. Dilatation was finally accomplished and a cystogram was made. A contracted bladder with ureteral regurgitation particularly on the left side was found. A well defined pyelogram on the left was produced in making the cystogram. Cystoscopy showed an enormously dilated left ureteral orifice. The right orifice was partially competent. Bladder fluid and detritus was seen to regurgitate into the left side. Urine obtained from catheterization of the right ureter showed only an occasional pus cell. Accurate determination of renal function was impossible, due to the enormous hydroureters.

Operation—Because of the uncertain renal function it was decided to divert the infected left kidney urine by ureterostomy. Under ethylene anesthesia, the ureter was exposed through an extraperitoneal incision. It was stripped of extensive adhesions and detached from the bladder. The bladder was closed and the ureter sutured to the skin at a point adjacent to the internal abdominal ring. The post-operative course was uneventful. Subsequent treatment consisted of urethral dilatation, lavage and over distention of the bladder.

Result—The patient has become entirely continent and is able to retain 250-300 c.c. of urine. He has gained forty pounds in weight, and has resumed his full duties as instructor in chemistry. Recent functional tests reveal a remarkable recuperation of the left renal function. There is a 30 per cent pthalein output in two hours through the ureterostomy opening. He is highly pleased to accept the responsibility of the care of the ureterostomy in exchange for the troublesome incontinence apparatus.

BLADDER LESIONS

Bladder dysfunction requiring reconstructive surgery has in our experience been due in most instances to vesical diverticula. We cite several instances in which large diverticula occurring adjacent to the ureteral meati required resection and reimplantation of the ureter. In one case, four large diverticuli were removed.

CASE REPORTS

1. Mr. W. B. P., age 71, married.

Urological History—Gradual loss of force of urinary stream for past three years. Passes small amounts frequently with great effort and discomfort. No hematuria.

Examination—Bilateral and median bar enlargement of prostate gland and large diverticulum of bladder, the atrium of which is adjacent to the region of the right ureter. No right ureteral orifice could be seen. 5,040,000 red blood cells, hemoglobin 82 per cent, 8,600 leucocytes, polys 64 per cent, urine 1.012, albumin 1 plus, innumerable pus cells, occasional blood cells.

Operation—Diverticulectomy. Due to the unusually large size of the diverticulum to which the right ureter was intimately adherent, the ureter was isolated and severed. Following the removal of the diverticulum, the ureter was split at its distal end and implanted into the upper angle of the incision, from which point the diverticulum had been removed. Sixteen days later, a v-shaped wedge was excised from the vesical orifice. The post-operative courses in both instances were uneventful. The patient was discharged eighteen days later, and was passing 80 per cent of the urine through the urethra.

2. Mr. C. K., age 68, married.

Urological History—Gradual diminution urinary stream for past six months. Difficult and painful urination. Nocturia 4-6. Has passed small amounts of blood several times in past month.

Examination—Cystogram and cystoscopy revealed large vesical diverticulum which communicated with the bladder at the right posterior trigonal area. The ureteral orifice could be seen at the outer margin of the atrium. A lateral and median lobe enlargement of the prostate was found. Red blood cells 4,280,000, hemoglobin 65 per cent, white blood count 12,200, polys 80, blood urea nitrogen 22.

Operation—Diverticulectomy. Because of dense perivesical adhesions in the deep pelvis, the ureter was isolated and re-implanted into the upper angle of the incision following the removal of the diverticulum. The post-operative course was not smooth, and he continued to have temperature and experience pain and tenderness in the region of the right kidney until, by temporarily blocking the suprapubic opening, a cystoscope was introduced and an indwelling ureteral catheter inserted and drainage established with frequent irrigation for five days. Six weeks after the first operation, the prostate was removed. The post-operative course was uneventful, and the patient was discharged twenty-one days later.

Urethral Lesions

Our experience with lesions of the urethra requiring plastic measures have had to do with injuries of the urethra followed by extensive scarring, epispadius and hypospadius. In one case herewith presented, the injury to the membranous urethra occurred with an extensive fracture of the ascending and descending rami of the pubes. The second case was one of dense unyielding stricture in the bulbous urethra developing, apparently, following a blow over the perineum.

Case Reports

1. J. L., age 18, male, single.

Urological History—About one year previous to our physical examination, patient suffered a fractured pelvis in an automobile accident. In this accident the posterior urethra was torn. The patient was brought to the hospital, where a cystostomy was done. The cystostomy wound healed, and the patient voided satisfactorily for a while, but six weeks ago he began to have considerable difficulty in voiding and sounds could not be passed. Another cystostomy was done, and also an external urethrotomy with retrograde dilatation of the urethra. Since the closure of this cystostomy wound, attempts have been made to dilate the urethra with sounds, but less and less urine has been passing through the anterior urethra, most of it being voided through the perineal fistula.

Examination—There was a suprapubic surgical scar and a urethro-perineal fistula. The patient is voiding most of his urine through this fistula. We were unable to pass filiforms through this area and into the bladder. Examination otherwise negative.

Laboratory—All tests negative, except 30 pus cells to the H. P. F. in the urine.

Operation—Spinal anesthesia. The old perineal scar was dissected out. Sounds passed down to the strictured area. A large mass of scar tissue involving about one and one-half inches of the posterior urethra was dissected away. A flap was then dissected from each side of the perineal body and used to form a new urethra. The flaps were attached to the cut ends of the urethra and built up around a No. 18 soft rubber catheter which had been passed through the anterior urethra and on into the bladder after removal of the scarred portion of the urethra. The wound was closed in lay-

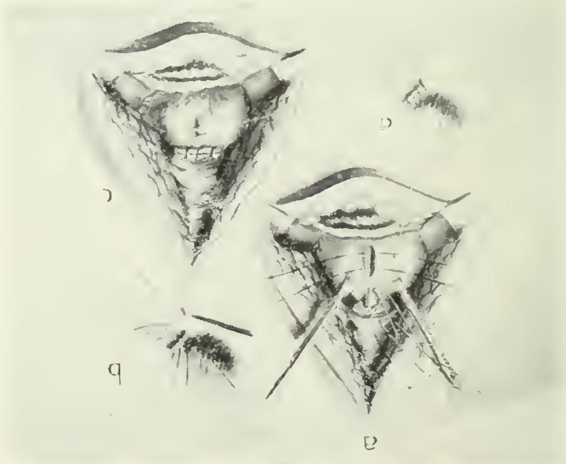

Fig. IX. Method of urethral anastomosis following resection of stricture.

ers with interrupted catgut sutures, a cigarette drain being inserted down to the new urethra. The skin was closed with silkworm gut.

Result—Nine days after the operation the perineal incision had healed and the catheter was removed. The patient's convalescence had been uneventful and he voided satisfactorily after removal of the catheter. Sixteen days after the operation he was still improving and the dysuria which had been present after removal of the catheter had about ceased. Twenty days after the operation, the patient was discharged from the hospital in good condition. His wound was entirely healed and he was voiding normally. He has reported for subsequent dilatations of the urethra and dilatation has gradually been carried up to 35 F. with a Kollman dilator.

2. T. G. P., male, married, 47, Judge.

Urological History—Kidney infection in 1915. Stone removed from bladder seven years ago. Has had pus urine past year. Came to physician two weeks ago, and stricture of urethra was found. Some initial difficulty, frequency, dysuria and nocturia. Passes small quantity, and seems to retain considerable urine in the bladder.

Examination—Filiform urethral stricture adjacent to external sphincter which was resistant to repeated attempts at dilatation. 300 c.c. of infected residual urine was found.

Laboratory—Urine: acid 1,022, albumin 2 plus, sugar negative, pus numerous, red blood cells 4-5 h.p.f., bacteria few, white blood count 9,200.

Operation—Ethylene anesthesia. Through perineal incision the urethra was exposed and isolated throughout the bulb up to the external sphincter. This portion was excised, and the ends reapposed. A No. 18 catheter was inserted in the anterior urethra, and a No. 20 into the bladder. The incision was closed in layers with No. 1 chromic cat gut and silk worm gut.

Histological Examination—Chronic inflammatory tissue.

Result—Periodic dilatation and lavage of the bladder has been carried out since discharge from the hospital, and a No. 28 bougie can now be passed easily.

3. Master J. H. C., aged 6 years.

Urological History—Patient admitted to the hospital for correction of peno-scrotal hypospadius.

Examination—Peno-scrotal hypospadius. Shallow urethral furrow on under surface of penis. Moderate degree of chordee.

Operation—External urethrotomy with insertion of a No. 14 catheter for diversion of urinary stream. The urethral flap was dissected up from the right margin of the urethral furrow. The longitudinal folds of fibrous tissue producing the chordee deformity were cut. The urethra was formed by suture of the flap of mucosa over a No. 12 catheter. Adjacent skin integument was then sutured over the urethra. It was later necessary to swing a scrotal flap upward to cover a small fistulous opening which persisted at the proximal end of the incision line. This was followed by secure healing, and a satisfactory result was obtained.

4. Master G. H. G., aged 6 years.

The patient was admitted to the hospital for correction of a complete epispadius.

Operation—External urethrotomy. Flaps of mucous membrane from either side. Large flap from right side. Sutured over small indwelling catheter. Corpora cavernosa separated and urethra turned between them to anterior surface of penis. Corpora reunited and skin sutured. The catheter was left in the urethra for seven days. The perineal tube was removed in ten days.

Summary and Conclusions

1. Our experience with cases in which reconstructive procedures have been applied indicate that a broader use of plastic methods upon the urinary organs is justified.

2. Remarkable degrees of recuperation in the function of the urinary organs follow the correction of anatomic or mechanical interference.

3. Urethroplasty should be more generally applied in the treatment of extensive organized strictures of the urethra, and particularly in those of traumatic origin in

which urethral dilatation is of little permanent value.

4. Many partially useful organs can be restored to their normal function, or their remaining function preserved; and the results often warrant attempts at reconstruction rather than the sacrifice of the organ.

DISCUSSION

DR. TOM BARRY (Knoxville): I unfortunately came in just as Dr. Hennessey was closing, and saw only a few of his pictures and heard only the last of his paper. Our experience with reconstructive operations on the urinary tract is rather limited. In plastic operations on the kidney, many things have to be thought of, namely, the patient's age, the condition of the opposite kidney, and his economic status. If a patient is 55 or 60 years old, has a perfectly normal kidney on the other side, I think it is extremely foolish to try any plastic work whatsoever. That isn't true in cases of stone-forming kidneys which we know are inclined to have further formation of stones. In cases like that, of course, plastic work is clearly indicated.

I am sure that Dr. Hennessey mentioned the work of Hinman on the formation of hydronephroses. He has shown that if a ureter is occluded for fourteen days and then the occlusion is removed and the other kidney is perfectly normal, it is unwise to try any reconstructive work on that kidney. It has been shown that this other kidney has hypertrophied or will hypertrophy to the extent that it will do all the work of both kidneys, and the occluded kidney will completely atrophy. In a persistent obstruction which has been complete for fourteen days or more, a nephrectomy is indicated, provided the opposite kidney is normal. Hydronephroses with poor drainage can often be completely relieved by plastic operations on the pelves, aided by some type of nephropexy.

We had one case in which we were removing a stone from the pelvis of the kidney. We knew that the other kidney was normal. The ureter was accidentally torn completely across. We did an end-to-end anastomosis on the ureter, put a catheter through a stab wound in the ureter about three inches below the pelvis, bringing this end out of the wound, and leaving the other end in the pelvis. After the catheter was removed he leaked only twenty-four hours. The function from this side taken some two or three months later was perfectly normal, as was also the urine from this side.

This is an unfortunate thing to happen, but if it does happen we can look with a good deal of confidence in believing the kidney will regain its normal function.

In traumatic rupture of the ureter, or kidney, especially in young people, I think every effort should be made to conserve the kidney on that side. If it is a person past 50, who has a perfectly normal kidney on the opposite side, I think it is much more logical to take out the kidney than to attempt any reconstruction. Experience and judgment are essential in successful termination in these cases.

We have not had occasion to transplant the ureter into the bladder. We have done bilateral transplantations into the inguinal region in a patient with extrophy of bladder. The ureters on both sides were so large that it was unwise to think of transplanting these into the bowel because of the risk of ascending infection. This woman has gone along for five or six years wearing ordinary soft rubber catheters in the ureters. These are attached to a cup which is hung to her waist. So far she has gone along very well, except for periodic attacks of acute pyelitis which usually subside in a few days. She has now been working for the past three years.

Operative reconstruction of the urethra is seldom indicated except in traumatic rupture. Strictures of the urethra are best treated by gradual dilatation. Epispadius unaccompanied by incontinence is best left alone. Operation results in cases of hypospadius are unsatisfactory and should not be attempted.

DR. H. C. GAYDEN (Nashville): The pyeloplasty which Dr. Hennessey has brought up so beautifully is practically a new field in this country at least, and is open to possibly a future that is going to revolutionize a great deal of kidney surgery. Just from his own pictures you can see what enormous destruction can take place in a kidney, looking as if it had no cortical portion left at all, or no secreting portion of the kidney left, and therefore it would be valueless. These are extreme cases, of course. These are mostly bilateral in a great many instances. The future of this, of course, will play its part in gun-shot wounds, carcinoma lower down, and various accidental means.

This is going to save, though, a great many kidneys. It is well known now, since cystoscopy has come into vogue, that a great many kidneys which seem at the present time to be lowered in their function, in six months, a year, or a year and a half have recovered to normalcy. They come back to nearer normal than they ever looked at the time you observed them.

Of course, the work of Dr. Coffey stands out as a monumental piece of work. I heard Dr. Coffey at Minneapolis in November say that before he could do three or four human transplants into the bowel, Dr. Charlie Mayo had done sixty from hearing about his work. So Mayo and Coffey are sharing together the original work on transplants of the ureter into the bowel, and up there it was demonstrated by a numerous and enormous quantity of work.

All of my work, as Dr. Hennessey said his has, has been confined to the lower urinary tract.

It is a very common occurrence to have a diverticulum with the ureter opening into it. I have just one case on hand now, on which I did a prostatectomy two years ago. He never would clear up of his foul urine. I finally got him to submit to cystoscopy, and this, by the way, is argument for cystoscopy being done previous to prostatectomy in a great many cases. This man had retention. I sent him to the hospital, did a drainage on him, did a second stage prostatectomy, and he went home, and two years later is having trouble. I cystoscoped him and found a diverticulum about the size of the little finger, did a cystogram, demonstrated an enormous diverticulum as large as the bladder, with a stone in the diverticulum, and the ureter coming out of the diverticulum, so he is in for as much work as he has already had done.

This is the place for uroselectan. It has not been mentioned in this meeting at all, in that you have no obstruction in the root. Uroselectan is best used where you have obstruction. Recently Winthrop has brought out a substance that is going to supplant uroselectan called skiodan. It is going to give a very much better shadow; it is going to be cheaper on the market. Dr. Bryce demonstrated 1,000 cases without any reaction, and it will work out a great deal better shadows and help us in our diagnosis considerably more than anything we have had up to this time.

DR. R. A. HENNESSEY (Closing): I agree thoroughly with the suggestion of Dr. Barry, that one must not sacrifice good judgment in their attempt to apply plastic procedure to the urinary organs. The circumstance must be thoroughly studied before the reconstructive measure is decided upon.

It has been proven to our satisfaction that such measures are more applicable in young subjects, and that restitution does not occur as satisfactorily in those past fifty years of age.

We feel that plastic surgery upon the urinary organs is making an important chapter in urology and that it will probably find broader application.

Ninety-ninth Annual Meeting

TENNESSEE
STATE MEDICAL
ASSOCIATION

Memphis April 12, 13, 14, 1932

FRANKNESS IN MEDICINE*

C. S. McMurray, M.D., Nashville

CUSTOM demands that your president deliver an address at this time. You, therefore, are yourselves responsible for having to be thus punished.

Precedent allows a rather free reign in selection of a subject from the many fields involved in or touched on by the science and practice of the healing arts; which we so commonly speak of loosely as Medicine.

The aphorism "There is nothing new under the sun" may be only too true, and yet we are constantly developing new thoughts, technique and methods; and continually evolving a better understanding with resultant new knowledge of all things in life.

The healing arts have been developed so rapidly within the past half century that the minds of practitioners have had to be continually active to keep in the forefront.

Time has long since past when one man's statement on any particular subject could be considered an authority and go unchallenged.

Today—if a statement is made in medical circles, or indeed, even in many lay circles, it must be backed by proven experiments or proper and thorough work in the various adjunct laboratories.

In other words, in the newer scientific conception of the healings arts, we have grown to expect all things to be proven as far as possible. And this is a truly correct attitude. Yet this very fundamental fact has made the mass of practitioners timid about expressing themselves in their medical meetings. They are frankly afraid of expressing themselves in the presence of the experimental worker and teacher or that proposedly learned individual — the specialist in his particular or narrowed field.

Thus medical meetings have in the past decade changed materially. The very inception of this society came about for the purpose of exchange of ideas among the practitioners of Middle Tennessee, and to give that broadening and leavening influence to the individual members that comes with intermingling and mutual exchange of experiences and ideas.

In former days, almost everyone felt free to express his thoughts wrought from the fullness of his experience. Discussion following the presentation of papers or essays was free and diverse. Today—after the reading of a scientific paper based not on clinical experience in the home so much, as on possible proven facts in the hospital and laboratory, there usually follows a stereotyped discussion by a member who has carefully gone over the paper before hearing it at the meeting in question. Then there seems to be a timidity on the part of members to get up and question or challenge any phase.

Thus this factor goes even further. Ask your program committee how much trouble they have in securing papers for this meeting from the members outside of Nashville. It is increasingly more difficult each year to secure papers from the practitioners outside of the medical centers.

I may be wrong in my deductions, but I believe it is due to an unwarranted and absolutely unnecessary feeling of timidity on the part of the individuals due to the present day scientific trend of medical literature. My plea here is: let us be frank with ourselves and each other and feel free to express ourselves in the presence of each other.

It is only too true that what benefit you derive from an enterprise is dependent in large measure to what energy you invest in it.

Time has very graciously wrought changes in the art of practice. Fortunately for us in practice today we are allowed to be human. Knowledge has done away very largely with the pretender in medicine. We are no longer called on to indicate our professionalism by wearing a top hat, an undertaker's coat and last but not least that incubator of germs and carrier of disease the long beard. Tho we do find occasionally among our brethren a Lilliputian reminder of days gone by in the presence of a smudge on the upper lip which some dignify by the name of mustache.

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*Presidential Address, read before the Middle Tennessee Medical Association, Fayetteville, November 5-6, 1931.

Fortunately for the younger generation—they get a break that was not accorded their counterpart of a generation ago. People do not now consider that a doctor must have gray hair to retain the knowledge they desire. Some even prefer the young bald head—probably feeling that this indeed must be virgin soil.

Along with the passing of this grotesque attire we are glad to see the disappearance of the mask of assumed importance and false knowledge which was so often wont to be imposed upon the public.

With increasing knowledge in medicine today we are proud to admit that we do not know, in many instances, and glad of our ability to be frank in discussing the truth with the patient or family. For, with perfected knowledge, truth, and frankness in dealing with the patient, we develop a power and confidence in ourselves that carries us far toward success.

And this confidence in our art and judgment develops a confidence on the part of the public that is unsurpassed in building faith in the medical profession today.

We must keep this foremost in our minds in dealing individually with the patient. He wants us first, to be honest and secondly to have knowledge. Then he knows that we will be frank in our dealings with him.

How different in most instances is our conception today of a consultation as compared to those of yesteryear! Today, consultation is more often asked for or even demanded by the practitioner than initiated by the worried members of the patient's family. In former days of pomposity and a false sense of knowledge masked behind a front of professional dignity: consultation often was said to have been denied and feared. Today consultation is welcomed because of possible enlightenment that might come from a new angle of thought or because of some special knowledge that might be hoped for in the consultant.

More and more today, we consult in the presence of the family, for we have as a rule no secrets to hide from them. Yet! The wise and benevolent consultant will refrain from public consultation or public expression that might create an impression of ill advised treatment or error in diagnosis on the part of the physician in charge.

Truth and frankness are virtues to be admired in the consultant or any practitioner for that matter. Yet, diplomacy is a virtue that should be developed as an art, toward the tranquil handling of delicate situations that so often arise in dealing both with the patient and your fellow practitioner.

It is a lack of diplomacy that I attribute many of the small local feuds and difficulties that arise between practitioners. A lack of mutual understanding as it were. This, coupled with an unwillingness, or rather with an inability to be frank in statement, has caused many practitioners to go thru life; working side by side and yet each pursuing his own course and never allowing their paths to cross.

A frank discussion concerning some supposed mistreatment at or immediately following the incident, would in a majority of instances prove the supposed injury to have been groundless, or if proven in fact, an apology could be forthcoming and a happy solution worked out.

How much better this? than to go thru life with a grudge, avoiding your fellow practitioner at every turn, rather than being able to work arm in arm with mutual benefit each for the other.

ETHICS

Much has been said concerning ethics of medical practice. There seems to be an undercurrent of thought that the changing times have brought evolutionary changes in our moral code concerning our dealings with each other. This may be true: yet, I challenge the thought. I would rather think that the desire on the part of some of the unscrupulous is father of the thought. For after all, ethics is based on the desire of the right thinking man to deal with his fellow creature according to the Golden Rule.

Nothing can give a young man a mistaken idea of ethics more quickly than to be mistreated by an older practitioner whom he has revered and learned to respect.

For this reason it seems to me that it behooves the older physicians to be very careful in their dealings with the initiate in medicine. For it is up to them to mould his ideas of ethical dealings.

I cannot refrain from stopping here to pay tribute to our friend, teacher and co-practitioner who has so lately been called from among us. Dr. Robert Caldwell was always known and will be ever reverently remembered by the younger men of Nashville today, as their friend and benefactor. No nobler tribute can be paid to any man. Altho fired by ambition sufficient to keep him in the limelight and to allow him to always be cast among the leaders, yet; he went about his daily routine in a simple quiet way. Professional jealousy did not seem to ever have a part in his make up.

It is to be regretted that with all humanity the road to success is besotted with that fiendish trait, jealousy. Some men seem to easily keep it in abeyance. Others are less fortunate. How easy it is to make a slight cutting remark about a competitor. How often can all of us recall from the past, incidents whereby innuendo or implication unkind and indeed wholly unnecessary detrimental remarks have been dropped by one physician concerning another. And if by chance you have been guilty you will also remember with chagrin, that feeling of guilt that is sure to well up within you later when you have had time to think and regret. How easy it is to say of a clean, clear cut and well trained younger man, "Yes, Doctor—— is a fine boy. He is going to be one of our leading practitioners some day." The very compliment you are apparently paying him, but said at the time and place, and in the tone expressed, is but a cutting remark to withhold temporarily from him that confidence and competence that should very probably be his by right.

But remember the day may appear to this same older man, grown yet older, when the younger having been trained to unscrupulous tactics and desiring to return evil for evil, may take the opportunity of saying in the same tone, under the same conditions and place: "Yes, he is a grand old man. He has been a leading practitioner—in his day."

Emerson in his discourse on the "Sovereignty of Ethics" says:

"To each shall be rendered his own. As thou sowest, thou shalt reap. Smite and thou shalt smart. Serve and thou shalt be served. If you love and serve men, you cannot, by any hiding or strategem, escape the remuneration. Secret retributions are always restoring the level, when disturbed, of the Divine Justice."

Honesty is a virtue desired and hoped for in all men. Yet, it is expected and demanded of all physicians.

Low in the scale of human judgment is the man who will take undue advantage of his adversary even in combat. How much lower is the man who betrays a friend? Then where in the measure of human judgment may we place the physician who is dishonest with his patient?

This may be considered from many angles, yet today one of the most outstanding quagmires to marr medical serenity in many communities is the divided fee. Much has been said and written concerning this evil in recent days.

Organized medicine has gone on record as demanding that any man found guilty of this nefarious practice be shorn of his membership in the American Medical Association. And yet, in this community (which is admittedly as free from this practice as any in the country) we probably do not realize the extent of this practice in other places.

Many of you probably do not know what a valiant fight was made only a few months ago by the right and upstanding members of the profession in a certain metropolitan community of this country, to actually keep an unscrupulous minority of that community from going on record as favoring or recognizing some form of fee splitting.

It has redounded to the credit of our whole profession that right prevailed—for if ever, a large group of the profession in this country—now recognized the world leaders—should stoop so low, as to take such a step to legalize this trafficking in patients; then, commercialization of our grand and noble profession would be consummated.

But why should this group take such a stand for fee splitting? For trafficking in human life and welfare just as the ambulance-chasing shyster lawyer stoops to pay for the names of individuals, who having been injured are therefore in the frame of mind or possible need for litigation.

What has warped their mental vision, to the extent that they will accept a portion of a fee not lawfully theirs; or will charge a fee out of proportion to the service rendered, or the ability of the patient to pay, in order to recompense a henchman for steering that patient to them? Are the economics of medicine such that this is the only way out for consultants to get a fair and equable remuneration for services rendered?

The answer of all honest and upright men in the profession is unhesitatingly—no. Would not the patient lose all respect for the whole profession if he but knew the intimate details of such a transaction? Is not this, dishonesty in its very essence? Would you call this frankness?

A careful study of the situation in one of these eastern communities where this practice is rife reveals some interesting facts. Situations which as yet have not taken root to large extent in areas outside of heavily populated centers.

These facts are elicited:—

Most hospitals in this center are closed institutions. These hospitals are controlled by large endowments. The staffing of these places are controlled to a very large degree by — family pull — politics and financial power.

When a patient gets into one of these hospitals or in the clutches of members of the staff—he is said to be lost as a patient to the family physician thereafter as a rule.

Young men well trained in their special field of endeavor, work day in and day out, year in and year out in the out patient departments of these institutions only many times to see their whole future blighted because of inability to make or attain the coveted places on the staff.

These institutions are advertised by their endowments, clinics and researches; and by their very magnitude in many instances so that much of the real paying or so called rich practice comes their way. This very naturally goes to the heads of the departments while the drone continues to labor with minor remuneration in the pit or out patient charity clinic.

What might be the reaction here on a mind not well couched in ethical standards?

Sociologists tell us that a man of good breeding and fundamental honesty will be driven to steal for his starving family, if denied the right of earning bread by honest work.

The average man in the profession being inherently honest and desiring only to be well thought of in his community goes about his daily task, humbly—never caring for glamour or glory. Yet, occasionally he stops to wonder at happenings that seem so diametrically opposed one to the other. He knows instinctively, that undue or unwarranted press notices in his little local paper concerning some of his minor goings and comings will in most instances bring rebuke from his fellow practitoiner and he may be severely critized; altho probably unjustly.

Yet, he opens a lay magazine of nation wide circulation and reads a well edited article with full descriptions of work done by a recognized leader or leaders in the profession. The article may also include well adapted illustrations and interviews. He may seek in vain for any evidence of rebuke of such articles from those higher up whom he has been taught to revere and respect as his elders, leaders and superiors. He rightly asks which of these is advertising?

So one wonders if these factors enumerated above do not form some basis for the warped mental attitudes of these misguided individuals who stoop to unethical dealing.

Maybe, we should attempt to set our house in order in other directions. Maybe, we should take unto ourselves individually, more seriously, this problem of the good Samaritan with the helping hand and this more especially applied to the moulding and aiding the initiate in medicine by precept.

For if he sees himself held in abeyance because of commercial gratuitous favors; dispensed at the hand of one who for the moment holds the political power in medical circles; or if he often feels the sting of unscrupulous practice from an older colleague; just so surely he may inadvertently, find himself in the toils of unethical dealing, while groping in half darkness toward the goal of success.

But with it all, we are happy to know that these extremes, tho having a marked influence in moulding thought, are not found to a great degree thruout our profession.

It is only thru frank discussion in the open, of uninviting subjects that we may many times start thought waves, that, tho small at first, may grow in magnitude to the end that happy solutions will be found. We may not then fear revolutionary communistic ideas which are fostered and flare, only under cover of the darkness of dissatisfaction, misunderstanding, intolerance and ignorance.

MEMBERSHIP IN THE

TENNESSEE STATE MEDICAL ASSOCIATION

EXPIRES DECEMBER 31, ANNUALLY

SEE YOUR COUNTY SECRETARY

AND PAY YOUR 1932 DUES

BELLYACHING ABOUT BELLYACHE; OR, WHAT ABDOMINAL PAIN SHOULD MEAN TO THE SURGEON*

RICHARD A. BARR, M.D., F.A.C.S., Nashville

IT MAY be well for me to assure you as I start that it is not my purpose to attempt to show that I know how to differentiate accurately between the various causes of abdominal pain, but to review briefly some of the reasons for my own mistakes in handling cases, and particularly to urge on us surgeons that, while every precaution should be taken (even though some loss of time is involved) and every possible diagnostic aid brought into play, a policy of watchful waiting is seldom justified in acute abdominal disease except by definite diagnosis of a non-destructive process. To wait on a definitely diagnosed gall bladder, for instance, is one thing, to wait because an abdominal pain may be due to the gall bladder is entirely another matter. As I see it there is more responsibility involved in waiting to make a diagnosis than in making one, I might even say, in forcing oneself to make a diagnosis.

It is natural for us to generalize and to attempt to philosophize, and the evidence that has been printed recently on the supposed increasing mortality of appendicitis has caused many of us to speculate on that subject which probably is the major half of abdominal surgery in this section. Most of the investigators have come to the conclusion that the high death rate in that condition is due to the great number of untrained surgeons now doing work in more or less incompletely equipped hospitals.

My own opinion in this particular matter is that in spite of the figures I am not convinced that the mortality in appendicitis has increased, but I feel very strongly that any mortality in appendicitis should cause searching self-investigation by both internists and surgeons.

But to return to my generalizations, my conclusions as to the cause of some of the mortality, and other bad results, that I have had, and have seen, are that they in the main result from mental or temperamental attitudes that are entirely capable of correction if we go at ourselves properly. We cannot give ourselves additional brains but we can let those we have function without interference by the state of mind that I shall discuss.

For one thing we as a profession have been of recent years more afraid of making a mistake in abdominal diagnosis than we have been of losing a patient by being too deliberate and by trying to be too accurate. Twenty years ago only leaders in surgical thought had this attitude but now we have all become so scientific and so steeped in pride of diagnostic accuracy, and I may add so afraid of the pathologist (that man who is supposed to know something we know we don't know), that we would rather lose a patient operated on late for easily proved pathology than to run the risk of showing our diagnostic posteriors to the competitor who is apt to walk into the operating room just as our trousers fall. If the spectators and the pathological laboratory back us up it is "just too bad" if the patient dies. No one is more opposed to *exploratory* surgery than I am, but I believe we should have more confidence in our own knowledge of the clinical aspects of a case than we have the respect for anyone else's idea of justifiable pathology. So far as the laboratory is concerned, after all even the *good* laboratory man is no more sure of his ground than the *good* clinician, and there are some large hospitals where the opinion of employees on small salaries are accepted after a mere cursory once over by higher authority as final in the matter of pathology.

After gangrenous appendices are reported as showing only chronic appendicitis in the areas examined microscopically and after patients with tumors reported as showing no laboratory evidence of malignancy in the necessarily restricted area of investigation die within six months from recurrence we began to visualize the laboratory as an aid and not as our master.

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*Read before the Middle Tennessee Medical Association, Fayetteville, November 5-6, 1931.

Living and cured patients are more important than pathological reports and hospital records. It is my opinion that prompt diagnosis and positive advice are the unescapable responsibilities of the man doing surgery for acute abdominal conditions, and that the microscope and typewriter even when they elicit and record facts which is not always the case, are under many conditions of more importance to future generations, and to the man who wishes to write for scientific publications than to the patient whose life is at stake.

Another fact that does not lower mortality is that few of us fail to have pet symptoms or signs that we rather insist on as being essential for diagnosis in individual diseases.

Some years ago I on two occasions that I can recall off hand kept cases of intestinal obstruction under observation in a hospital because vomiting was absent when I was sure from the finding later that serious damage had already been done to the intestine (and small intestine at that) when the patient was first seen by me. We have all recognized the fallacy of the other man's position in this respect but that does not always teach us that our own pathognomonic sign may point the wrong way or that our essential symptom may not be essential after all. Nearly always we pick on something that other people have failed to recognize as having such superlative importance but that makes us proud rather than thoughtful, and we refuse to let even our own further experience shake our confidence in this offspring of our imagination. Naturally we close our ears and minds to the arguments of our professional brothers, but surely further and contradictory experience and observation should be able to overcome the most established false belief. It is true that if we know anything from the history of medicine is that years of experience may teach us that we are right though we are wrong all the time, but we also know that continued open-minded observation will finally upset the apple cart of coincidence. It is bad enough to be bigoted in one's belief as the result of mere personal experience, however extensive, but it is much worse to refuse to be taught by a change of experience. We still hear it said that a chill is pathognomonic of perforation in appendicitis, and that sudden cessation of pain means a gangrenous process. These beliefs even though absolutely incorrect, as they possibly are, would be harmless in themselves, but unfortunately some of us put on the reverse English and wait for a chill or sudden relief of pain before being willing to consider acute appendicitis as serious. (We continually revert to appendicitis in discussing abdominal disease because of its frequency which has resulted in every one having had sufficient experience to develop very positive ideas with regard to its diagnosis and handling.)

Here it may be interpolated that surgery has made its own large direct contribution to its dilatoriness. Some twenty years ago Van Buren Knott, then a prominent surgeon of the West, made the statement, "Since we are no longer afraid of peritonitis, etc." That was a few years after Murphey had reported his fifty cases of perforative peritonitis with two deaths, and it was common to speak of peritonitis as a physiological process because it was Nature's reaction to an infection. A large amount of water by bowel would turn the peritoneum into a secreting instead of an absorbing membrane, so it was said, and a sufficient number of properly placed drainage tubes would in combination with proctoclysis result in the peritoneum washing itself clear of all earthly contamination. Why not, if we did not fear peritonitis and had plenty of water and drainage tubing available for the possible peritoneal emergency, wait for complete diagnosis since the patient has a very real chance of avoiding surgery altogether? Many, both surgeons and internists, did, and there was no hesitancy about trusting surgery to cure the peritonitis that sometimes complicated the situation. I have always feared peritonitis and was often in those days thrown into a panic by the candid frankness with which it was handed me as a mere physiological process that would help me if I was only intelligent enough to help it. This attitude still persists to an appreciable extent even among surgeons. I do not wish to minimize the capacity of the peritoneum for combatting infection but the outcome of peritonitis is largely a matter of bacteriology and there is no surgical treatment of it per se. The surgical treatment of peritonitis is preventive, not curative. Successful surgery in delayed cases has naturally led to further delay but even the most skillful and intelligent surgery of the primary focus will all too often, in the presence of certain established peritoneal infections, come too late.

Another error of which we are guilty is failing to recognize the fact that any abdominal pain that is above suspicion of being imaginary, certainly every abdominal pain that has all the stigma of being genuine, and is present in a patient free of any history or suggestion of previous neurosis, must be accredited to one of the known diseases of the abdomen no matter how anomalous the case as a whole may appear. Every abdominal pain has an inalienable right to be accredited to some one of the diseases that are known to the doctor looking after it. The fact that the case is mysterious, or anomalous, does not justify attributing it to some mysterious disease, which because of its mystery is either safe, or has a right to prove fatal without discredit to anyone.

Let's take a glance at some of the diseases that produce abdominal pain at times, and see when it is justifiable to wait for complete confirmation of our suspicions in anomalous cases.

Of the *non-surgical* causes of abdominal pain (Angina Pectoris, Coronary Thrombosis, Pneumonia, Epididymitis (no abdominal surgery), Typhoid Fever (non-perforative), Entero-Colitis, Normal Pregnancy, Rheumatism and Purpura), careful investigation with proper facilities will either make the diagnosis or at least exclude the indication for surgery except in the case of entero-colitis which is a hard nut to crack as it is not infrequently associated with appendicitis and rarely with intussusception.

Of the less urgent *surgical* conditions like diseases of the gall bladder and bile ducts, kidney and ureter, Fallopian tubes, here again careful investigation will make the diagnosis in most instances, but there will be some doubtful cases, and we should never quietly await developments on a mere tentative diagnosis, particularly when we suspect gall bladder or fallopian tubes where early operation is not entirely without warrant for its own sake. When we turn to ectopic pregnancy (bleeding from Graafian follicles), gunshot and stab wounds, subparietal traumatic injuries, spontaneous rupture of the spleen, pancreatitis, acute diverticultis, the various causes of strangulation or other destructive damage to the intestine (including hernia, internal and external), perforative peptic or typhoid ulcer, mesenteric infarct, tumors with twisted pedicles, etc., we find little to give us hope that delay is justifiable. My position is that the surgeon should, with proper help of course, make either a diagnosis of non-destructive process or a diagnosis of some one or of some one of two, processes with destructive possibilities and give his advice accordingly. It is further my opinion that this responsibility rests on surgery, and cannot be handed to or even shared with medical consultation. An established surgeon should have the courage of his convictions, and should cover up his errors as best he can without laying them on his medical confreres.

Another mistake that we all make at times is in attempting too much, or in doing meddlesome investigation, in the presence of an acute infection. A case of the former for instance is myomectomy or hysterectomy in connection with acute appendicitis, particularly if the infection has spread to even a strictly local area of peritoneum. The long incision and careful inspection of the abdominal cavity advocated and used at the Mayo Clinic is adapted to the kind of work done there, but must not be applied in the type of cases most often encountered in private practice in this section. The abnominal incision should be no longer than is required for the surgery that is supposed to be urgently needed, and should not under these conditions be made for general inspection purposes. Curiosity, scientific or otherwise, has no place in surgery of this nature. If a mistake is made the incision can be extended or a new incision made, but an unnecessarily long incision leads probably to unnecessary handling, and certainly to loss of time in closure even if it does not stimulate a curious interest in seeing the wheels go round.

Possibly I am wrong in my next criticism which is of a fault that I try earnestly to avoid but the avoidance of which I suspect is not impressed on the young men who are being trained in some large hospitals. I refer to what impresses me as roughness in handling tissues. Hurry often loses time and always results in traumatism. A snappy technic makes a good impression on the superficial observer, but the assistant who can and does *suddenly* release and suddenly remove a hemostatic clamp rather disturbs me, and the left-handed artist in this matter completely overturns my equilibrium. Gentleness pays for any loss of time it may induce, as anyone will concede, but it is altogether possible that I attribute too much importance to deliberate action in achieving gentleness. To the best of each one's ability we should have a paraphrase of the French General Staff's "attack" slogan always in mind: "Gentleness, gentleness, always gentleness."

REMEMBER

THE NINETY-NINTH ANNUAL MEETING OF THE TENNESSEE STATE MEDICAL ASSOCIATION AT MEMPHIS TENN., APRIL 12, 13, 14, 1932

ABSORPTION TEST IN SINUS DISEASE AND ALLERGY*

JAMES H. LIPSEY, M.D., Memphis

IN reporting what is supposedly new work in a certain field of research, it is understood that many records of experimented cases are necessary in order to establish a principle. Because of the very nature of the experiments here reported the available source of material is limited. These experiments are reported on a relatively small number of individuals, and it is believed best to withhold any conclusions as to their value until the work has been completed. New material is being added monthly.

I have sought light on the importance of sinusitis as a focus of infection, through absorption study. The frequent association of pyelitis and sinusitis suggested the work here reported. All the work was done on adults.

The generalized toxemia of acute purulent sinusitis has been observed by all of us. We know that this must be a result of absorption. What has been a mystery to many of us is the frequency of a foul pus bearing cavity, which apparently has produced no discomfort, symptoms, or signs. Any specialist can testify to the numberless times he has opened these cavities and the resulting odor almost forcing him to leave the room. It is probable that the patient will then tell of the time back in 1918 when he had influenza, from which he did not recover for three months. These cases and the acute cases led the writer to believe that valuable information might be obtained from a study of the absorption time of sinus membranes. This also led to a study of allergic membranes, and the membranes of patients with swimming pool infections.

The cases were grouped for study in six groups, as follows:

First: Normal sinuses.

Second: Definite purulent sinusitis with symptoms or complications.

Third: Seemingly symptomless quiescent phenolsulphonphthalein into the nasal vestibule. Examination of the urine of patients so packed showed heavy traces of the dye within one hour. Full strength was next tried and the same result obtained. There was no irritation noted. No patients were examined that suffered from diminished kidney function. Proof of rapid nasal membrane absorption was established by the preliminary tests as above described.

Next it was desirable to test a normal sinus membrane. After a diagnostic puncture of an antrum from which normal washings were obtained, one c.c. of the dye was introduced through the canula. The irrigating solution had of necessity been sterile water in order to avoid changing the reaction of the dye. The canula was withdrawn and a small pledget used to close the natural opening. After one hour the urine specimen showed a small percentage of the drug. After four hours 60 per cent, and by morning absorption was complete. That is, absorption was complete within fourteen hours.

The next cases studied were under group two, purulent sinusitis with symptoms or complications. Three cases were studied and the results almost identical. First tests pons saturated with a dilute solution of

Before injecting the drug into the sinuses it was necessary to test it for irritating properties. This was done by packing tamsulphonphthalein. The drug being easily recovered from the urine and percentage content determined by the colorimeter. This was done in much the same way as in testing kidney function.

Sixth: Cases of atrophic rhinitis.

All the cases of purulent sinusitis studied had positive cultures of mixed bacteria from the antral washings.

A method for testing absorption was

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*Read before the Eye, Ear, Nose and Throat Section, Tennessee State Medical Association, Knoxville, April 14, 15, 1931.

worked out with the use of the drug phenol-cases of purulent sinusitis.

Fourth: Allergic membranes, with and without polypi.

Fifth: Cases of what will be called swimming pool rhinitis.

were made without drawing the pus from the antra. Complete absorption was evident in an average of sixteen hours. Absorption from a previously irrigated antrum was slightly more rapid.

The third group was one in which we were most interested. That is foul pus producing cavities which produced no known symptoms. These are the cases usually discovered by accident, or picked up in routine examinations. Two such cases were studied. Tests were done before and after irrigation. One case had a delay of six hours in the appearance of the drug in the urine. In the second case the dye showed up in what I would call a normal time, that is one hour. Both cases were women suffering from pyelitis. They were relieved when the antra were clear of pus.

The fourth group, allergic cases, consisted of four patients. These had a delay in absorption. The average time being three hours. It was difficult to test this group because of the difficulty offered in getting complete closure of the natural openings. The fluid leaked out before the tests were completed. An average of 65 per cent of the dye was recovered from the urine. In two cases the fourteen hour specimen still contained evidence of absorption.

Group five had only one case. That was a swimmer's rhinitis. These cases have a profuse nasal discharge, require a long time for recovery and for the amount of nasal discharge have very little secretion in the antra. This peculiarity has caused me to wonder if there is not a true water carried allergy. They frequently have a severe conjunctivitis associated with the nasal condition. Tests done on this patient showed a delay in absorption, but the urine was clear after twelve hours.

The last group was that of atrophic rhinitis. Of course, nasal membrane absorption was slow in this group. Sinus absorption was not delayed any appreciable amount.

Conclusions drawn from these experiments as a whole are few. First we have positive and complete evidence of rapid absorption from the so-called quiescent abscesses. Second, there is some evidence of considerable delay in absorption from allergic noses. Infection and allergy are so frequently associated that this may some day prove important.

DISCUSSION

DR. W. W. WILKERSON: This subject has been discussed many times. Likewise much experimental work has been done. Nevertheless little has been discovered of clinical value for the reason that the investigations have heretofore prematurely ceased.

Some facts have long been recognized such as the absorption of cocaine, adrenalin, etc., by the nasal mucosa. Also we often see asthmatic cases clear up for a varying length of time after sinus drainage has been established. This would lead one to believe that some asthmatic cases are caused by the absorption of a foreign protein such as pus in the sinuses.

Lymph Adenitis is further proof of the power of the mucous membrane to absorb various substances.

A few years ago Mullin and Ryder, of Cleveland, injected India ink into the frontal and maxillary sinuses of rabbits and cats. These animals were killed and examined from three to seventy days later. The lymphatic drainage was found to be as follows:

By way of the cervical and internal jugular nodes, great veins and lymphatics of the neck and thorax, the right side of the heart into the lungs and bronchial and mediastinal glands. Occasionally some carbon deposits were also noted in the so-called "tonsil node" at the angle of the jaw. This may at times account for its persistent enlargement after a tonsillectomy.

Many sinus infections are secondarily complicated by bronchitis. This is undoubtedly due to lymphatic drainage, as well as an overflow from the sinuses and also the aspiration of septic material.

Another interesting angle is the fact that absorption occurs whether the mucous membrane is normal, edematous, atrophic, or stratified squamous in type.

Since the above is true, is it possible that the etiology of colds, complicated sinus diseases, asthma, etc., is correctly interpreted? I say not. The usual list of given causes may be the impetus which is necessary for such pathology, but the susceptibility of certain individuals to these diseases still hides behind a veil of secrecy.

We recognize that certain tissues normally act, so to speak, as filters; that is, they allow only certain substances to pass through. You may say they are selective. Is it possible that normally the nasal mucosa possesses such power and that following certain pathological changes this power is lost?

I once did a bit of experimental work on this subject, but failed to "follow through". I congratulate Dr. Lipsey on his investigation, for in reality he is treading on unbroken ground. We who are present should feel ourselves privileged to have heard this unusual, but most important essay.

See Your

County Secretary

TODAY

Pay Your 1932 Dues

THE VALUE OF X-RAY IN OBSTETRICS*

P. C. Schreier, M.D., and J. R. Reinberger, M.D., Memphis

METHODS of precision applied to Obstetrics make it more of a science and thus elevate the practice to a fitting dignity with which it has not always been embellished. The combined specialty of Obstetrics and Gynecology is steadily carving its way and making place for itself along with the other more firmly established divisions of medicine.

The practitioners of each specialty are called upon to evaluate the application of new procedures to their particular fields. Careful analysis of accumulated experience is the method by which such is obtained. With the advent of x-ray it was only natural to believe it would be of inestimable value in the field of Obstetrics for we have here to deal with bony structures principally, namely, the maternal pelvis and fetal skeleton. Contrary to this reasonable expectation, its use has remained limited until recently. Fear of injuring the fetus, no doubt, has been a factor in this limitation. It is true that ill effects on the fetus may follow therapeutic doses being administered to the mother during pregnancy resulting in monstrosities, yet it can be accepted as a proven fact that diagnostic exposure sufficient to make several films is perfectly safe.

The roentgenologist can be of great assistance in the field of diagnosis and differential diagnosis during pregnancy. Of late we have called upon him for aid during labor in certain types of dystocia. It is our purpose to briefly review our experience with, and the value of such assistance.

During Pregnancy

Much attention has been given the possibility of the early diagnosis of pregnancy with the roentgen-ray. Because of the impossibility of outlining a fetal skeleton during the first three months when the diagnosis is most in doubt the x-ray offers little assistance prior to the fourteenth week. From this time on evidence of fetal skeleton can be seen on the film. (1) Peterson and Crohn (2) advocated pneumoperitoneum as a preliminary to making the exposure in order to obtain a clearer outline of the uterus, basing the diagnosis on a change in contour. Hauser (3) filled the uterine cavity with iodized oil and on the basis of a characteristic defect made a diagnosis of pregnancy. He stated that abortion would not follow, but with this we are not in full agreement, as we have seen one abortion follow the procedure. When therapeutic abortion is contemplated should pregnancy be proven then this method will be permissible. Other tests such as the Ascheim-Zondek are more reliable than the x-ray during very early pregnancy.

Hydramnios usually arouses a suspicion of either multiple pregnancy or monster formation. The association of excessive fluid especially with monstrosities is unexplainable, but has been observed so frequently as to be regarded as one of the symptoms. The roentgenographic study will relieve the attendant's mind and occasionally reveals the presence of a monster. In the latter event the patient may be saved much suffering by the ethical interruption of pregnancy, or by avoiding such a major operation as Cesarean Section being performed for the delivery. In making such studies, we request that a lateral as well as an anterior posterior view be made. Valuable information is often disclosed by the combined study of the two views.

In the differential diagnosis between such conditions as large ovarian cysts and hydramnios, fibroids or other masses and pregnancy of four months or more the x-ray is frequently employed. In pseudocyesis the symptoms may be so suggestive as to make it difficult to convince the patient that she is not pregnant. Because of the build of these patients with such a syndrome, examination may be unsatisfactory, and it will require an x-ray to settle the question. Several years ago an experience with an abdominal pregnancy gave us the idea of studying such a case in the future with the aid of the roentgen-ray. Within the past few months such an opportunity presented itself. The uterine cavity was filled with lipiodol and as you will see in the slide a small uterus is outlined with a fetus on outside. Similarly a pregnancy in one side of a duplex uterus was studied and revealed a small empty uterus with the fetus in the other side.

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*Read before the Tennessee State Medical Association, Knoxville, April 14, 15, 16, 1931.

Death of the fetus in utero is indicated by overlapping of skull bones providing the patient is not in labor. Mathews (4) recently called attention to the bowing of the spine as another sign. Combined with clinical evidence of fetal death these findings are very significant. The problem of pelvimetry or of measuring the pelvis has been intensively studied by Thoms (5). With the cooperation of Dr. Pulliam of the roentgenological department of the M. G. H., we were able to perfect a satisfactory modification of Thoms' technique. Much to our surprise our experience in a series of cases revealed that careful clinical measurements checked very well with those made on the plate. Therefore, we concluded that x-ray pelvimetry did not offer sufficient advantage to justify more than an occasional employment. However, in the course of our studies we stumbled on to a valuable procedure, which will be discussed later.

Many ingenuous devices and variable techniques have been perfected to outline the pelvic inlets in an anterior posterior view. They enhance our ability to recognize unusual deformities as a symetrically contracted inlets and to make accurate measurements of the several diameters. Because of the special apparatus required and the complexity of the technique, we regard such methods as of more scientific interest than clinical aid. Furthermore, the detection of major contractions and abnormalities offers no great difficulty even by the routine pelvic examination. Once recognized the problem is solved by performing Cesarean Section at or before the onset of labor. Our great concern is with the so-called border line contractions in which the outcome of labor is uncertain and yet good Obstetrics requires a trial at normal delivery.

IN LABOR

To date the clinical conduct of labor in the border line pelvis has shown little improvement and contributes in no small degree to the prevailing high and much discussed obstetrical mortality and morbidity. It is realized in suggesting the use of x-ray that from an economical standpoint it is frequently prohibited. Nor do we advocate it as a substitute for clinical experience. Nevertheless, it must be regarded as an adjunct of inestimable value in following the progress of labor where disproportion is questionable and a slip in judgment hazardous. Unfortunately there is often a period of indecision extending over several hours which has left some of us in a position where the proper procedure for mother and baby could not be safely carried out. It is the ability of the fetal head to enter the pelvis that we want to see demonstrated. In our studies it became apparent that with the lateral view of the pelvis we obtained a much clearer answer to this question. The amount of overriding in unengagement or if engaged the exact degree as well as amount of molding can be readily seen. The profile view of the sacrum makes clear the contour of the pelvic canal. We are convinced that when an occasion arises to x-ray a patient during labor for the purpose of determining the feasibility of delivery per vagina the lateral view is infinitely more informing than any other posture yet introduced. No special apparatus is necessary. The only requirement in addition to a modern x-ray equipment is experience in reading the film, which the physician himself should learn to do.

SUMMARY

It can be accepted as a proven fact that it is perfectly safe to x-ray the pregnant women for diagnostic purposes.

Postive evidence of pregnancy can be seen on the film after the fourteenth week. The roentgen-ray is of great value in the diagnosis of multiple pregnancy, abdominal pregnancy, abnormalities of the fetus, and in differentiating lower abdominal masses from pregnancy.

In the management of labor complicated by dystocia the lateral view of the pelvis will clearly reveal the relationship of the head to the pelvic inlet. This is often of great aid in deciding for or against vaginal delivery.

With improved technique and closer cooperation between the roentgenologist and obstetrical attendant the x-ray will become as valuable in Obstetrics as in other branches of medicine and surgery.

BIBLIOGRAPHY

(1) Stein and Arens: Roentgenograms of the Fetal Skeleton as a sign of pregnancy. J. A. M. A., Vol. lxxxi, No. 4.

(2) Peterson and Crohn: Trans-Uterine Gas Inflation. J. A. M. A., 1923, Vol. lxxxi, page 380.

(3) Jarcho: Utero Salpengorrhaphy, S. G. & O., 1927, Vol. 45, page 129. (Refers to Hauser).

(4) Mathews: Journal Obs. & Gyn., Nov. 1930, Vol. xx, No. 5, page 612.

(5) Thoms: Clinical Significance of X-ray Pelvimetry, A. J. Obs. & Gyn., Vol. 7, page 543.

Toombs: Effects of X-ray and Radium on the Fetus in Utero. Amer. Jour. Gyn. & Obs., April, 1929, Vol. 17, page 516.

Fall: Diagnosis of Foetal Deformaties in Uterus. Amer. Jour. Gyn. & Obs., Dec. 1928, Vol. 16, page 801.

Padduck: Spurious Pregnancy. Amer. Jour. Gyn. & Obs., Jan. 1929.

D. P. Murphy: The Outcome of 625 Pregnancies in Women Subjected to Radium and Roentgen Radiation. Amer. Jour. Gyn. & Obs., Aug., 1929, Vol. 18, page 179.

From the Department of Obstetrics, Memphis General Hospital and University of Tennessee.

MEMPHIS

APRIL 12, 13, 14, 1932

ANNUAL MEETING

TENNESSEE STATE

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H. H. SHOULDERS, M.D., Editor and Secretary

JANUARY, 1932

EDITORIAL

Veteran's Relief

It might be of interest to review briefly some recent developments in connection with veterans' relief.

For the past several years the American Medical Association has been opposing some of the Federal legislation sponsored by the American Legion in the interest of disabled veterans. The opposition was expressed in resolutions, editorials, etc.

Nothwithstanding the attitude of the American Medical Association the American Legion went right along with its program. An enmity toward the American Medical Association grew up in the American Legion. There was never a conference between the two. The two organizations shot at each other at long range, so to speak. Neither group had an opportunity to get the viewpoint of the other.

At Philadelphia, in June, 1931, the American Medical Association, through its House of Delegates, adopted a constructive program for veterans' relief. It was embodied in a resolution which has become known as the Shoulders' resolution.

The program was condemned at first by leaders in legion affairs. It has been endorsed, however, by a large number of local legion posts.

As a result of the resolution two conferences have been held between representatives of the American Legion and the American Medical Association. The first one was held in the offices of the American Legion at Indianapolis on November 19, 1931. The next one was held at the offices of the American Medical Association in Chicago on December 30, 1931.

These conferences have been productive of much good. Certain prejudices have been removed. Some understanding of the viewpoint of each group has been developed. The two groups have been brought to a conference table. The leadership in each group have become personally acquainted. The discussions have been carried on in a dignified manner. No definite commitments have been made by either group concerning the alteration of their respective legislative programs, but the first logical step toward the formation of a program of relief which each can support wholeheartedly has been made.

* * * *

The following is a statement that has just been received from the Chairman of the Committee, Dr. C. B. Wright.

Report of Conference Between Representatives of the Veterans Administration, the American Legion, the American Hospital Association and the American Medical Association.

The second conference with the committee from the American Legion was held at the headquarters of the American Medical Association on December 30th, 1931. At this meeting were Capt. Watson B. Miller, Chairman of the Disability Committee of the American Legion; Mr. Earl Cliff, Mr. Edward Hayes, of the special committee appointed by Commander Stevens of the American Legion; Dr. Cooley representing the Veterans Administration in Washington; Mr. Paul Fesler, President of the American Hospital Association, and Dr. Caldwell, its Secretary; Dr. E. H. Carey, President-elect of the American Medical Association; Dr. Heckel, Chairman, and Dr. Walsh, Dr. Upham, and Dr. Cullen, of the Board of Trustees; Drs. Carey, Cullen, Upham and C. B. Wright, members of the Committee on Legislative Activities; Dr. H. H. Shoulders, Dr. Crockett, Dr. Otho Fiedler, Dr. Angus McLean, and Dr. E. A. Meyerding, members of the sub-committee on Veterans' Legislation; Dr. Olin West, Secretary and General Manager of the American Medical Association; Dr. Fishbein, Editor of the Journal of the A. M. A.; Dr. Woodward, Director of the Bureau of Legal Medicine and Legislation; Dr. Cutter of the A. M. A.; Mr. Hartman, and various other people interested in the conference.

This meeting lasted from 10 a. m. to 5 p. m. with a short intermission for lunch.

Almost every angle of veterans legislation was discussed. The point of view of the Legion, the point of view of the Veterans' Administration, the point of view of the American Hospital Association, the point of view of the A. M. A., and, in addition, a very thorough discussion of the insurance plan of Dr. Shoulders.

The early part of this conference, after preliminary discussion by Dr. Shoulders and introductory remarks by Capt. Miller, Dr. Heckel and Dr. Cooley, was largely taken up with the discussion of hospital costs. After a great deal of discussion there was a general agreement that this discussion was futile because there is no basis of comparison, due to the fact first, none of the veterans' hospital costs include the cost of construction, interest on investment, depreciation costs, complete cost of transportation, cost of the administration in Washington, and the cost of one large diagnostic center in California. Second, none of the statements in regard to cost were based entirely on the same group of cases or same type of care; that in reports of private hospital costs extreme cases were cited. Third, that many of the comparisons made were based on obsolete contracts which dated back since 1926 and no real attempt had been made to make a survey of the civilian hospital facilities for these purposes.

The position was taken by the Veterans' representatives that the question of costs between the two methods of care was not the important consideration but only insofar as it related to better care of the veteran. That they were not interested in perpetuating a system of federal medicine, in fact they were very much opposed to it, as they were very sympathetic to the practice of medicine. They strongly urged the care of acute disease and emergency surgical cases as convenient as possible to home at the expense of the government.

It was brought out there was no need for increase in tuberculosis hospitals but claimed there was a great need for more hospitals for nervous and mental cases. That cases of mental disease were being compensated by the government and yet are at large and an instance was cited where one of these cases had recently murdered his father. It was generally agreed this type of case demanded hospitalization and that the hospital building program of the future should be confined to this group and that this building program should fit in as nearly as possible with future civilian needs for this type of hospital. It was also shown that the hospital building program of the present was not by any means determined by the Legion or Veterans' Bureau, but largely determined by Congressmen who wanted something for their district. The extent of the hospital beds necessary to take care of the load imposed upon the Veterans' Administration by Congress was discussed and various estimates were made from sixty to one hundred thousand beds. These estimates are purely theoretical and in the minds of many of us might be as well placed at two hundred thousand beds as at sixty, considering the expansion of this whole program in the recent past.

In the discussion of what these beds might be used for after a few years when the veterans' needs were largely satisfied, two suggestions were brought out: (1) Needs for future warfare, (2) the possibility they might be used for the civilian population under a new system of social medicine. The representatives of the Veterans' Administration wisely would not commit themselves on the future plans, but took the stand their sole object was to carry out, to the best of their ability, and with the greatest efficiency, the mandates of Congress.

The American Hospital Association strongly urged the use of civilian hospitals for all veterans waiting to be hospitalized, and also made a plea for the smaller hospitals throughout the country as they claimed size had nothing to do with the question and many of the smaller hospitals were better equipped and could give better service for the ordinary conditions than some of the large ones.

The representatives of the Legion were particularly interested in the rating schedule of the Veterans' Administration and asked us for our cooperation in simplifying a schedule which they claimed was impossible to understand.

The Trustees of the American Medical Association present, and the officers and Dr. Fishbein and Dr. West, expressed great interest in the meeting and were very anxious to offer any possible cooperation to both the Veterans' Administration and the American Legion. Dr. Fishbein made a very strong plea for the solidarity of family life and dangers of the state taking over the responsibilities and duties which rightfully belong in the family and emphasized the danger of all social schemes which separated the members of a family from each other. He called attention to the fact that the present plan of medical care and hospitalization for the veterans was conducive to the breaking up of the family, instigating a program contrary to the foundation of our present social order.

The discussion throughout was open and frank. The representatives of the Legion I may say met us more than half way and expressed a frank desire to cooperate with us in every way and welcomed our help in solving many of their problems. As representatives of a great body they were not in a position to commit themselves to the Shoulders' Plan, particularly as this plan had been treated with slight courtesy at the national convention at Detroit. They expressed their continued interest in it, however, feeling it would be difficult to operate and hard to get legislative enactment for such a plan. Personally they were not in any way opposed to this idea, as it would confer an additional benefit on the Veteran.

A tentative agreement was suggested which embodied (1) that the hospital building program should stop except hospitals for the care of nervous and mental cases and all building plans should be modified as far as possible to meet the future needs of the civilian population by location and distribution. (2) We tentatively agreed that a modification of veterans' legislation should be asked allowing veterans to be taken care of in the civilian hospital at home and that all acute surgical and medical conditions should be so cared for. All of the organizations were urged to carefully consider this tentative agreement and as far as possible obtain reactions from their own organizations.

Capt. Miller then proposed that the representatives of the American Medical Association, American Hospital Association, Committee on Disabled Veterans, Veterans' Administration and the American Legion, confer in Washington on the 1st, 2nd, and 3rd of February. This was agreed upon.

In conclusion, one might ask what were the results of this meeting. As I see it, they are:

1. A far better understanding of each other's point of view.

2. A better understanding of the Veterans' Administration.

3. An opportunity on the part of the American Medical Association to perform a real service in helping to simplify the disability rating schedule of the Veterans' Bureau.

4. A tentative platform on which we can all stand; that is, agreement on revising the law so that veterans may be taken care of by home doctors and hospitals, and second, a termination of hospital building except when necessary for nervous and mental cases, and modified as far as possible to fit in with the civilian hospital of the future.

This conference accomplished everything that could be reasonably expected in our opinion. However, it is only a beginning. What small committees decide will have very little effect if not backed up by a united and informed profession. The announcement of any program might meet with immediate opposition on the part of the doctors or the veterans unless they are sufficiently informed and have a point of view. One should bear in mind, in addition, that what is going to be accomplished will be largely determined by the American Legion, which is well organized, has very efficient leadership, and an appeal in the name of the disabled veteran which is almost irresistable.

We would therefore again urge every state medical association to take steps to get acquainted with the American Legion and their point of view. This, we feel, should be done quietly through the organization of group committees or individuals, medical veterans largely, who are members of Legion posts.

We feel it is absolutely essential to the future of medicine in this country that this present federal hospital program be curtailed to the bone and that the Legion should be informed that we have existing now facilities for the medical care of veterans; facilities which are quite adequate for the general population including the wives and children, mothers and fathers, of veterans.

We would further urge you to contact your Congressmen and Senators and give them an idea what is going on and how we feel about the building of hospitals. The family advisors of Senators and Congressmen are the best men to work through. These men have the confidence of our representatives and through them proper information may be disseminated quickly. An effort should be made to find out who they are. Dr. William H. Welsh told me that that was the method he had used on occasions some thirty years ago and considered it the most effective.

Do not forget the Shoulders' Resolution. It has aroused the profession to the folly of the present method of care for veterans, and do not forget that this may be the plan eventually adopted by the American Legion as the simplest and most equable method of furnishing medical benefit for veterans. We must remember that any type of federal medicine, including federalization of hospitals, must be eventually enacted into law by Congress before it is operable. There is no question in the minds of informed medical men that if the profession of this country were united and would work they could absolutely control legislation relating to the practice of medicine in this country.

CHARLES B. WRIGHT, *Chairman.*

HYDROPHOBIA

The lay press of the state is carrying news of the death of a child which took place in or near Knoxville while Pasteur treatment was being administered. It also carries news to the effect that an exhaustive investigation as to what might have been the cause of this death is being made. In this connection it is mentioned that about five hundred Pasteur treatments were administered by the health department of one municipality in Tennessee during the year 1931. This news is astounding.

Most of the people who take Pasteur treatments are children. It is a sad thing that the children must suffer for the shortcomings of their elders.

There are a few fundamental facts related to this subject which should be borne in mind. The first is that when rabies is controlled in the dog population there ceases to be an important danger of rabies in the human population. The policy at present in force is the reverse. Our human population, mostly children, suffer because we have not prevented rabies in the dog population.

The prevention of rabies in the dog population is easy of accomplishment by methods that are simple and relatively inexpensive. This fact has been demonstrated over and over again. If such a policy were enforced in Tennessee at the present time it would eliminate a substantial portion of the public health budget. It would eliminate the salary of the personnel of the various departments whose work is devoted to the administration of Pasteur treatments. It would eliminate the cost of the manufacture of the treatments. It would eliminate the cost of maintaining laboratories for the purpose of making diagnoses. It would eliminate the cost of equipment such as hypodermic needles, syringes, etc. In fact, it would eliminate the expense incident to the diagnosis of rabies in dogs as well as the expense incident to the preparation and administration of Pasteur treatments. In addition to this, and of far more importance, it would save the people the harrowing, to say nothing of the hazardous experience of taking the Pasteur treatments.

Large sums of money are being expended by state, county and municipal departments of health. They are created and maintained by the public mainly for the purpose of preventing disease by the removal of the fundamental causes of disease.

It is obvious that the giving of shots by public officials to children bitten by rabid dogs is not dealing with fundamentals. It is dealing with a late incident that should never have occurred. Health officials know all these facts. It is not the lack of knowledge that causes the trouble. This is rarely ever the case. In this instance it may be the lack of courage. The present policy may be more attractive.

To have a large number of people appear at the health department every day for the administration of the shots probably makes a profound impression on the public and indicates enormous activity by the department. Certainly the administrative management of the dog population would be less spectacular. It would be less adaptable to statistical portrayal. But no one could deny that it would do a thousand times as much good and involve the expenditure of a smaller sum of money.

The practitioners of medicine as usual must furnish the leadership in the movement for a revision of the policies of the departments of health in this matter. Let's prevent our children from being bitten by mad dogs.

April Meeting of the Tennessee State Medical Association

The next meeting of the Tennessee State Medical Association takes place in Memphis on April 12, 13, 14, 1932.

Dr. Percy W. Toombs, President of the Shelby County Medical Society for the year 1932, announces the appointment of the following Committee on Arrangements:

Dr. E. C. Ellett, Chairman;
Dr. H. B. Everett,
Dr. George R. Livermore,
Dr. Louis Levy,
Dr. Otis Warr.

The meeting place has not yet been designated but will be in a short while.

It has been some years now since we met in Memphis. We should have a most excellent meeting this year.

DEATHS

Dr. Joseph Rogers Walker, of Rogersville, died at his home on December 18th. He was 100 years old on August 24th.

For more than sixty years Dr. Walker was a practicing physician of Rogersville, having been the only survivor of the class of 1854 of the Jefferson Medical College of Philadelphia, the class having numbered 350.

Dr. R. DeWitt McDonald, of Tazewell, was killed on December 14th in an automobile wreck.

NEWS OF WOMAN'S AUXILIARY

Woman's Auxiliary
Tennessee State Medical Association

Advisory Council

C. M. Hamilton, Chairman, Nashville.
R. N. Herbert, Nashville.
L. T. Stem, Chattanooga.
Shields Abernathy, Memphis.
D. H. Anthony, Memphis.
Mrs. W .H. Gragg, Memphis, President.
Mrs. Rogers N. Herbert, Nashville, Chairman Press and Publicity Committee.

State Auxiliary Board Meets in Nashville

The executive board of the Woman's Auxiliary to the Tennessee State Medical Association held a meeting Friday at the Hermitage Hotel, with Mrs. W. H. Gragg, of Memphis, president, presiding.

Dr. C. M. Hamilton, chairman of the advisory council, gave an address encouraging the auxiliary in this work.

Mrs. Percy W. Toombs, of Memphis, was elected to fill the unexpired term of Mrs. Alfred Mason, director from West Tennessee, whose resignation was tendered at this time.

Mrs. L. W. Edwards was elected chairman of public relations committee. A new auxiliary was reported in Johnson-Sullivan district.

The Davidson County Auxiliary entertained the visitors with a dinner at the Hermitage Hotel. Mrs. Gragg was presented with flowers.

Upon the invitation of the Middle Tennessee Medical Society which held a meeting at Fayetteville in November, Mrs. B. F. Byrd, vice-president of the state and chairman of organization in this section, presented the auxiliary movement to this group of doctors and gave an outline of plans for organization. This body unanimously indorsed the auxiliary movement with four presidents of county medical societies appealing for help in immediate organization to their respective medical societies.

Mrs. Theodore Morford, president of Davidson County Auxiliary, gives a most enthusiastic account of the November and December meetings. She reports much interest being manifested and all county chairmen being actively engaged in promoting their work. The philanthropic department recently sponsored a benefit card party of which Mrs. W .O. Floyd, chairman, reports very successful results. The money obtained was spent for the benefit of the children of the Tuberculosis Hospital.

Mrs. Morford also states that the programs have been exceedingly interesting and informing. Dr. W. D. Haggard addressed the auxiliary in November using as his subject "The Periodic Health Examination" which he pointed out as one of the outstanding objects of the auxiliary in its program of Health Education. In December, Dr. Milton Smith Lewis spoke most ably on the subject of "The Pre-school Child." He especially stressed the ages between two and six years believing this to be the most neglected age, with emphasis on close supervision of the child's physical condition.

Knox County reports that they are making progress with their hospital work and that at each of their regular monthly meetings they are having talks by their local physicians which are proving very interesting. At the November meeting their speaker was Dr. W. S. Nash, on "Know Thyself." In December, Mrs. W. W. Potter, Press and Publicity Chairman, reports that the auxiliary voted to take care of a needy family for Christmas; also that members were urged to bring used magazines to the January meeting for the Beverly Hill Sanatorium. Dr. R. G. Reaves gave an interesting address on "The Deaf." He also presented motion pictures taken at the Tennessee School for the Deaf.

NEWS NOTES AND COMMENTS

THE MID-SOUTHERN POST GRADUATE MEDICAL ASSEMBLY

This assembly is the successor of the Tri-State Medical Association. This year the meeting date will be February 9-12. Following the policy of the Tri-State the program will be furnished by the leaders of medicine from all parts of America.

Plan to spend the four days, February 9-12, in Memphis and to hear a series of addresses by notable medical men.

It seems that our editorial regarding the prompt payment of dues was effective. Several counties have already remitted dues in full for all their members. Other counties are sending remittances for a good proportion of their members.

Please remember the county secretary cannot forward your dues to us before you pay him. So see your local secretary and help him to make an early report for your society.

The paid membership of the county societies on January 5th was as follows:

Bedford	7
Campbell	16
Coffee	9
Fayette	1
Hardeman	3
Knox	120
Monroe	11
McMinn	1
Polk	7
Roane	4
Tipton	5
Weakley	8
White	12
Williamson	2
Wilson	18
Total	224

Dr. B. T. Bennett, of Trenton, seems to be specializing in the delivery of girl babies. In September and October he attended twenty-two consecutive cases before he was able to introduce a son to the parents.

Dr. Boyd Bogle, of Nashville, addressed the doctors and dentists of East Tennessee and Southwest Virginia at Kingsport early in December. Dr. Bogle's subject was "Diagnosis of Focal Infections of Interest to Both Dentists and Physicians."

Dr. E. B. Clark, of Sparta, was the victim of accidents in December. While he was taking a patient to Nashville in an ambulance he was painfully injured in a wreck. The next night while making a call on a patient who could not be reached by car, he was thrown from a mule and suffered a broken arm.

The American Board of Ophthalmic Examination will hold an examination in New Orleans, May 9, 1932. Application for this examination can be secured from Dr. Wm. H. Wilder, 122 South Michigan Avenue.

Southeastern Surgical Congress

There are undoubtedly at the present time so many medical societies, that one hesitates to advocate the organization of a new one, but if an association can be organized to give more efficient service to the profession, those not performing such service will die a natural death and greater progress will be attained.

The Southeastern Surgical Congress was organized in Atlanta January 7, 1930, the object of which was to associate for the advancement of surgery well qualified surgeons in the district composed of the seven Southeastern States.

According to the law of supply and demand such an association is a necessity. In many sections or even states there are local surgical associations which give opportunity for personal expression and advancement of the surgeon, as example, the New England States, and the Pacific Coast States.

There is no surgical association whose membership is confined to surgeons residing in the South, where there are twelve thousand surgeons. Whereas alone in those states composing this congress there are registered three thousand surgeons, of which possibly five or six hundred should be eligible to membership in such an organization as only well trained and otherwise qualified surgeons will be admitted.

Dr. Robert C. Coffey, of Portland, Oregon, who was a guest at the last meeting of the Congress states: "Practically every great surgeon of this country has had some organization similar to the Southeastern Surgical Congress as his god father." Dr. Rudolph Matas says: "The formation of the Southeastern Surgical Congress is in accordance with the law of supply and demand," and on another occasion states, "The Congress will place Southern Surgery in its proper place in the recorded history of the profession and uncover to the remainder of the country the real talent that the South possesses."

The great value of this association cannot be questioned, if the facts regarding the necessity, requirements and purposes are thoroughly understood, and it is hoped that every surgeon who is well qualified will submit his application for membership.

Willis C. Campbell, M.D.

NEWLY ELECTED OFFICERS OF COUNTY MEDICAL SOCIETIES FOR 1932

Bedford County:

T. J. Coble, Shelbyville, President.

J. D. McCord, Lynchburg, Vice-President.

W. H. Avery, Shelbyville, Secretary-Treasurer.

Blount County:

D. R. Thomas, Calderwood, President.

J. M. Waters, Walland, Vice-President.

J. A. McCulloch, Maryville, Secretary-Treasurer.

Campbell County:

S. D. Queener, Jacksboro, President.

H. T. Fortner, Jellico, Vice-President.

F. A. McClintock, Newcomb, Secretary-Treasurer.

Carter County:

W. H. Longmire, Elizabethton, President.

E. L. Caudill, Elizabethton, Vice-President.

E. T. Pearson, Elizabethton, Secretary-Treasurer.

Chester, Henderson and Decatur:

C. A. Brandon, Lexington, President.

J. L. McMillen, Decaturville, Vice-President.

H. T. Pitts, Henderson, Vice-President.

L. C. Smith, Henderson, Secretary-Treasurer.

Cocke County:

M. S. Doak, Newport, President.

C. W. Larue, Parrottsville, Vice-President.

J. E. Hampton, Newport, Secretary-Treasurer.

Coffee County:

E. L. Womack, Summittville, President.

U. B. Bowden, Pelham, Vice-President.

E. P. Vaughan, Manchester, Secretary-Treasurer.

Davidson County:

C. M. Hamilton, Nashville, President.

L. C. Caldwell, Nashville, Vice-President.

N. S. Shofner, Nashville, Secretary-Treasurer.

Dyer, Lake and Crockett:

R. W. Griffin, Tiptonville, President.

W. S. Alexander, Ridgley, First Vice-President.

J. L. Powell, Friendship, Second Vice-President.

Percy A. Conyers, Dyersburg, Secretary-Treasurer.

Greene County:

Cecil Laughlin, Greeneville, President.

R. D. Keller, Greeneville, Vice-President.

M. D. Blanton, Mosheim, Secretary-Treasurer.

Hamblen County:

J. F. Campbell, Morristown, President.

F. F. Painter, Morristown, Vice-President.

P. L. Henderson, Morristown, Secretary-Treasurer.

Hamilton County:

B. L. Jacobs, Chattanooga, President.

H. A. Laws, Chattanooga, Vice-President.

A. M. Patterson, Chattanooga, Secretary-Treasurer.

Hardin, Lawrence, Lewis, Perry and Wayne:

O. H. Williams, Savannah, President.

C. C. Stockard, Lawrenceburg, Secretary-Treasurer.

Knox County:

E. G. Wood, Knoxville, President.

G. A. Williamson, Knoxville, Vice-President.

Jesse C. Hill, Knoxville, Secretary-Treasurer.

Madison County:

R. B. White, Jackson, President.

G. W. Brasher, Jackson, Vice-President.

B. C. Arnold, Jackson, Secretary-Treasurer.

Maury County:

G. C. English, Mt. Pleasant, President.

E. M. Ragsdale, Columbia, First Vice-President.

R. S. Perry, Columbia, Second Vice-President.

C. D. Walton, Mt. Pleasant, Secretary-Treasurer.

Monroe County:

W. W. Leonard, Tellico Plains, President.
W. H. Arrants, Sweetwater, Vice-President.
T. M. Roberts, Sweetwater, Secretary-Treasurer.

Montgomery County:

M. L. Hughes, Clarksville, President.
F. J. Malone, Clarksville, Vice-President.
H. A. Nesbitt, Clarksville, Secretary-Treasurer.

Obion County:

J. D. Carlton, Union City, President.
Ilar Glover, Union City, Vice-President.
F. B. Kimzey, Union City, Secretary-Treasurer.

Polk County:

C. W. Strauss, Copperhill, President.
H. P. Hyde, Copperhill, Vice-President.
F. O. Geisler, Isabella, Secretary-Treasurer.

Roane County:

T. L. Bowman, Harriman, President.
J. C. Fly, Kingston, Vice-President.
W. W. Hill, Harriman, Secretary-Treasurer.

Robertson County:

J. S. Hawkins, Springfield, President.
W. F. Fyke, Springfield, Vice-President.
R. D. Moore, Springfield, Secretary-Treasurer.

Shelby County:

P. W. Toombs, Memphis, President.
J. L. Morgan, Memphis, Vice-President.
J. J. Hobson, Memphis, Treasurer.
A. F. Cooper, Memphis, Secretary.

Tipton County:

H. W. Sale, Covington, President.
J. J. Fleming, Atoka, First Vice-President.
N. R. Newman, Covington, Second Vice-President.
L. J. Lindsey, Covington, Secretary-Treasurer.

Washington County:

J. T. McFadden, Johnson City, President.
Harry D. Miller, Johnson City, Vice-President.
John L. Hankins, Johnson City, Secretary-Treasurer.

Williamson County:

Dan German, Franklin, President.
P. H. Edwards, Franklin, Vice-President.
K. S. Howlett, Franklin, Secretary-Treasurer.

Wilson County:

F. E. Shannon, Lebanon, President.
J. L. Ames, Lebanon, Vice-President.
J. R. Bone, Lebanon, Secretary-Treasurer.

MEDICAL SOCIETIES

Benton, Carroll, Henry, Weakley Counties—The attendance at the December meeting was good and the program was voted to be the best of the year.

Dr. L. E. Trevathan presented a paper on "Five Cases of Extra-Uterine Pregnancy." Dr. H. L. Alexander opened the discussion.

Blount County—The annual dinner of the Blount County Medical Society was held in the Maryville High School on December 29th. The address of the retiring president, Dr. E. H. Lowe, and installation of officers completed the program.

Dr. Perry Bromberg, of Nashville, was a guest of the Blount County Medical Society on November 12th, at which time he read an excellent paper on "Silent Renal Calculi." Dr. Samuel Riven, of Nashville, was present, and read a paper on "The Thyroid Heart."

The Knox County Medical Society members were guests of the Blount County Society on this occasion, and were entertained at Druid Hills Tea Room. Some of the members of the Monroe County Society were present also.

Dr. C. P. Fox, of Greeneville, read a paper before the Blount County Society on January 14th.

Carter County—At the December meeting, Dr. E. L. Caudill read a paper on

"Secondary Anemia." The society was the guest of Dr. Paul Williams, the retiring president. Following the election of officers refreshments were served.

Chester, Henderson and Decatur Counties—The Tri-County Medical Association met in Henderson on November 12th with nineteen doctors present. Several papers were read and discussed.

On December 10th, the meeting was held in the cafeteria of the city school. After lunch Dr. A. B. Dancy, of Jackson, discussed "The Relation of Headache to Nasal Trouble," and Dr. W. J. Fitts, of Jackson, spoke on "Acute Conditions of the Abdomen." Both papers received liberal discussion. A good attendance was present.

Coffee County—Every member of the society was present at the December meeting. A turkey dinner was served at the home of Dr. E. P. Vaughan.

Dyer, Lake and Crockett Counties—Thirty-five members were present at the meeting on December 2nd. Dinner was served at the Baird-Brewer General Hospital. The following program was rendered:

Address by the retiring president, Dr. E. S. Hopper, Alamo.

"Puerperal Infections," by Dr. W. B. Anderson, Nashville; discussed by Drs. Charles A. Turner, J. L. Powell and R. C. Newkirk.

"Concerning Appendicitis," by Dr. R. A. Barr, Nashville; discussed by Drs. R. L. Motley and E. H. Baird.

Hamblen County—The annual banquet was given at the Morristown General Hospital. The society was the guest of Dr. C. T. Carroll, the retiring president.

Hamilton County—A memorial service for the late Dr. E. B. Wise was held on Dec. 17th. Resolutions were passed and short talks were made by Drs. E. T. Newell, B. S. Wert, Dunbar Newell, W. E. Anderson, G. Victor Williams and J. C. Brooks.

Knox County—Dec. 8th: "The Thymus in Children," by Dr. Joe T. Smith. Discussed by Dr. Abercrombie.

Dec. 15th: Election of officers.

Dec. 22nd: "The Present Status of the Management of Chronic Sinusitis," by Dr. R. G. Reaves.

Madison County—Dr. Edwin Cocke, of the Western State Hospital, was the principal speaker at the meeting held in Jackson on Dec. 1st. A banquet was served at the Southern Hotel.

Maury County—Dr. J. S. Covey, retiring president, spoke on the "Cure and Treatment of Measles" at the December meeting.

Officers were elected and the proposed location in Columbia of a veterans' hospital was discussed.

Montgomery County—The December meeting was addressed by Dr. F. J. Malone, the subject being "Rabies."

Obion County—At the December meeting, officers were elected and future work discussed. Dr. W. B. Harrison gave an interesting illustrated lecture on "Malaria Prevention."

Roane County—At the December meeting plans were made for a big celebration of the society's thirtieth anniversary. On January 19th, a big get-together meeting will be held. A banquet will be served and every doctor in the county will be invited.

Robertson County—On December 15, the meeting was held in Springfield. Eleven members were present. Case reports by Drs. Garner, Fentress, Gossett and Dye.

The presidential address, by Dr. Fentress, was on "Criticism of the Science of Medical Practice."

Dr. A. R. Kempf read a paper on "Pneumonia" which was discussed at length.

Washington County—The December meeting consisted of informal discussions of case reports and the election of officers.

A good attendance was present.

Weakley County—At the regular quarterly meeting held in Martin Nov. 18th, the program was as follows: "Mastoiditis," by Dr. Seldon Cohn, Fulton, Kentucky. "Sinitis," by Dr. R. Graham Fish, Paris.

Nineteen physicians were present.

OTHER MEDICAL SOCIETIES

Vanderbilt University Medical Society
November 6, 1931

1. Case Reports:
   - (a) *Herpetic Fever With Stomatitis.* Dr. J. B. Youmans.

The various forms of herpes simplex have assumed a new importance in view of their transmissability to animals, their relation to other filterable virus diseases and their possible neurotropic action in man. A case of herpetic fever with stomatitis in which the virus was isolated from the lesions in the mouth, was reported. Attempts to isolate the virus from the blood and spinal fluid failed. The significance of the clinical and laboratory findings in relation to the pathogenesis of herpetic infections was discussed.

Case discussed by Drs. Goodpasture, Burwell, Dodd and Casparis.

   - (b) *Pregnancy in Each Horn of a Bicornate Uterus*—Dr. A. B. Barrett.

White female, age 30, gravida VI, with history of premature twins with fourth pregnancy. Admitted with complaint of pain in R. L. Q. and amenorrhea for two months. Diagnosis of bicornate uterus with pregnancy in each horn, confirmed by pneumoperitoneum on admission and by x-ray of twins three months later. Pregnancy terminated spontaneously at seven months by vaginal route. Both infants died a few hours after birth.

Case discussed by Dr. L. E. Burch.

2. *Vaccinal Infection in the Chorio-Allantoic Membrane of the Chick Embryos.*—G. John Buddingh, Dr. E. W. Goodpasture and Dr. A. M. Woodruff.

The virus of vaccinia has been successfully grown in a pure state in the chorio-allantoic membrane of the chick embryo through fourteen generations. Microscopical studies of both smears and paraffin sections have shown that the virus multiplies enormously in this tissue, that the virus is an obligate intracellular parasite represented by the Paschen body found in the smears; that the inclusion body, typical of the lesion (the Guarneri body) is essentially an intracellular colony of Paschen bodies. Guarneri bodies are described for the first time within cells of mesodermal origin, viz: capillary endothelium and fibroblasts and in the epithelial cells of the endoderm.

Paper discussed by Dr. Goodpasture.

3. *The Cause of Dyspnea on Exertion in Patients with Cardiac Disease*—Drs. Tinsley Harrison, John P. Marsh and Gross Harrison.

It has been shown that the greater ventilation in such patients is dependent on reflex stimulation of respiration from:

1. The lungs, due to decreased vital capacity.
2. The moving muscles.
3. The right side of the heart, due to increased venous pressure.

Paper discussed by Drs. King, Burwell, Lamson, and Garrey.

Vanderbilt University Medical Society
December 4, 1931

1. *Relationship of Placenta, Hypophysis and Ovary*—Drs. Harold Klingler, John C. Burch and R. S. Cunningham.

It has been found that alcoholic extracts of the placenta contain a substance which increases the capacity of the anterior lobe of the hypophysis to stimulate the ovary. This stimulation, resulting in the formation of lutein tissue in the ovary, is instrumental in the maintenance of pregnancy.

Paper discussed by Drs. Wolfe, Lucius Burch and Cunningham.

2. *Studies of the Treatment of Shock*—Drs. J. W. Beard and Alfred Blalock, Messrs. Harwell Wilson and B. M. Weinstein.

The intravenous administration of fluids to animals in shock as the result of gross injury to large capillary areas, and in shock following the administration of histamine, resulted in no increase in plasma volume and was accompanied by the loss of considerable amounts of protein from the circulation. Similar treatment in cases of decline in blood pressure following hemorrhage and the administration of spinal anesthetic caused no additional loss of protein. The administration of fluids subcutaneously and intraperitoneally caused no loss of protein from the circulation. The injection of adrenalin and pituitrin with fluid intravenously did not prevent the loss of fluid and protein.

Paper discussed by Drs. Brooks, Cunningham and Blalock.

3. Dr. G. Canby Robinson, Director of the New York Hospital-Cornell Medical College Association, and former Dean of the Vanderbilt University of Medicine, discussed the activities of the Vanderbilt and Cornell Medical Schools.

ABSTRACTS OF CURRENT LITERATURE

ANESTHESIA

By Hugh Barr, M.D.
Medical Arts Bldg., Nashville

Airways. Geoffrey Kaye, M.D., Melbourne, Australia. Current Researches in Anesthesia and Analgesia, Sept.-Oct., 1931.

Direct obstruction of airways has been responsible for 10% of 105 anesthetic fatalities collected by the writer in Melbourne. The percentage would be increased if heart failures due to relative anoxemia were included. Anoxemia is due to direct effect of occlusion of airways caused by falling back of tongue, unfavorable-postured patients, obstruction to respiratory pathway due to inflammatory conditions of the neck, and spasm. Anoxemia is also caused by pulmonary and cardiac diseases, and the increased toxic effect of anesthetic drugs inadequately diluted with air.

Acute anoxemic patients, if unrelieved, will pass into the stage of asphyxial convulsions. How long they can endure such asphyxia depends upon the integrity of their cerebral and cardiac systems. If relieved before the worst has happened, they may present a picture of cerebral hemorrhage or irreparable damage to the cerebral centers and die in a day or so without regaining consciousness.

In cases of obstructed airway or potential obstruction or defective oxygen-carrying mechanism, the choice and method of anesthesia should be carefully considered, and that one chosen that will allow the anesthetic to give the maximum amount of oxygen. Apart from the influence of cyanosis upon post-anesthetic sickness, pulmonary complications, and delayed recovery from the anesthetic shock enough has been said to indicate the fundamental importance of full aeration during each and every anesthesia.

CLINICAL PATHOLOGY

By R. H. Monger, M.D.
Medical Building, Knoxville

Certain Monilias Parasitic on Man; Their Identification by Morphology. Jour. of Inf. Diseases. R. W. Benham, Sept., 1931.

The parasite (Monilia Albicans) found in thrush is a well defined species which can be recognized and differentiated from related forms by its morphologic and cultural characteristics. The monilia psilosis described by Ashford is apparently identical with the Monilia Albicans isolated from thrush. Other yeast-like organisms found in the various dermatoses should for the present be placed in this species. Other species showing slight, but definite, morphologic differences are found on the skin and in the sputum and feces. The author tested thirty strains of Monilias for virulence. Nineteen, identified as Monilia Albicans, from various sources, were pathogenic for rabbits. Eleven strains of other types did not produce any lesions. Seven strains of Monilia Albicans proved similar in antigenic content as determined by reciprocal absorption of agglutinins. The slight differences detected could not be correlated with the sources from which these strains were obtained. Agglutinative reactions, when used in conjunction with other methods, were found the most satisfactory means for the identification of these rudimentary forms.

Pulmonary Siderosis: Two Cases With Reticulo—Endothelial Siderosis—Arch. of Path., August, 1931. M. G. Bohrod.

Two cases of pulmonary siderosis are reported by the author. One in which the dust was metallic iron, produced the black variety of siderosis and ended in a florid tuberculous broncho-pneumonia. One, in which the dust was iron ore, produced the siderosis of the red variety and the concomitant tuberculosis of the fibrotic type and was limited to the lymph glands. In both cases there was a continuous attempt at excretion of the iron by macrophages which carried it into the alveoli and thence into the sputum by excretion through the bronchiolar mucosa or by transference to the lymph nodes. In the latter the pigment was either deposited in the gland or was carried through the gland and reached the blood stream probably by way of the thoracic duct. Having reached the blood stream the iron was deposited in the cells of the reticulo-endothelial system. In addition to transportation there was gradual transformation of the iron. Only the soluble iron could be transported and was found intracellularly. In the black variety, in which more silicon than iron was present in the lung, only the more soluble iron found its way into the blood stream.

DERMATOLOGY

By E. E. Brown, M.D.
Doctors Building, Nashville

Pituitary Therapy of Alopecia. A Preliminary Report. By Bengt Norman Bengtson, M.D., Maywood, Ill. The Journal of the American Medical Association, November 7th, 1931.

Five years ago while treating with pituitary preparations a case of Frohlich's syndrome in a woman, the author noted that she had developed a luxuriant growth of hair in addition to relief of her other symptoms. On this basis he began to study the effect of certain pituitary preparations on alopecia and reports sixteen cases.

Their alopecia had existed from a few months to twenty-three years. Good to excellent results were obtained in all. One c.c. of anterior pituitary extract was given by hypo one to four times weekly in addition to seven and one-half grains of whole gland extract by mouth daily. A few of the cases received five grains of posterior extract daily. The number of injections and length of treatment varied. Since preliminary report he has made further observations of cases of alopecia prematura, circumscripta and seborrhoica. He reports that apparently there are even greater results to be expected in common baldness than in alopecia areata.

He noted that low blood pressure was increased and high blood pressure reduced. The obese lost weight and the thin gained. Another interesting notation was that five of the cases, who had had severe headaches and had been treated for chronic sinusitis, or migraine unsuccessfully, became completely free from them.

NOTE: I can heartily agree with the author. For the past eight years I have been using the whole gland extract by mouth and have had some good results. I believe that had I used the injections I could have had better results.

INTERNAL MEDICINE

By R. B. Wood, M.D.
C. J. Carmichael, M.D.
Knoxville

The Adequate Treatment of Anemia. George R. Minot and W. B. Castle. Annals of Internal Medicine, 5-159-169, Aug., 1931.

Adequate treatment of pernicious anemia consists of giving enough potent material from liver, stomach, brain or kidney to the patient throughout life. It is highly important that the physician know the potency of the preparation prescribed and that the patient actually take the prescribed amount. Improvement or response may be noted by the reticulocyte response. Failure will be found due to inadequate dosage, poor quantity of product, the presence of complications, or an incorrect diagnosis. Dosage is not determined wholly by the hemoglobin and cell count, but by the blood picture as a whole, plus the patient's symptoms. Calling for increased dosage as a rule are infections, disorders of the liver, kidneys, age, arteriosclerosis and neurological complications. If the latter, if in old age or of long standing, limited improvement only is to be expected, but if recent or referable to the peripheral nerves relatively rapid improvement is to be expected.

Adequate treatment of the anemic is not confined to prescribing adequate dosage of liver or other similar substances. Attention is given the patient as a whole, whether it be mental, mechanotherapeutic or otherwise. Those with neurological complications are to avoid the sun. Those with low color index should receive iron. Those with hyperthyroidism thyroid extract, etc.

In chronic secondary anemia the privilege of giving adequate amounts of iron must be adhered to, after determination and correction of causative factors. Cases of chronic chlorosis at times demand continued iron administration, and close observation throughout life is necessary.

Bronchial Asthma. Chas. K. Maytum. Medical Clinics of North America, 1931.

The writer reports two cases of asthma in which all other methods of relief had failed, that were relieved by administration of ether per rectum.

About one ounce of equal parts of ether and olive oil per each twenty pounds of body weight were used. Morphine preceding the ether seemed to prolong the effects of the ether and to reduce the amount used. It is to be repeated as the indications arise, but not to be used when other remedies are effective.

Hypo Chromic Anemia. Dameshek. Journal Am. Med. Sciences, October, 1931, page 520.

The writer makes an exhaustive study of patients suffering from this condition. He calls attention to the very great similarity between this and pernicious anemia, the clinical symptoms being almost identical. They give histories of remissions, sore red tongue and mucosa, anorexia, loss of strength, loss of weight, paresthesiaes, (cold areas, numbness, tingling), mental dullness. They show either an Achlorhydria or at least a Hypochlorhydria. Their blood picture shows a Leucopenia, a low color index, a relative lymphocytosis. There is a marked achromia and microcytosis. The blood picture causes one to think of a chlorosis, but the clinical symptomatology so completely overshadows these findings that the conclusion that he is dealing with a condition related to pernicious anemia must be accepted. He does not designate etiology, but suggests that "it probably is dependent upon the inadequate digestion of organic iron which may lead to faulty hemoglobin synthesis and improper maturation of erythro and normoblasts in the bone marrow."

"IBID" Idiopathic Hypochromemia. Edward S. Mills, McGill University.

Mills reports his study of 23 cases of Hypochromemia and sends forth the same group of clinical symptoms and laboratory findings. He differentiates the condition from (1) Pernicious Anemia; (2) Chlorosis; (3) Splenic Anemia; (4) Acute Hemolytic Infectious Anemia; (5) Aplastic Anemia; (6) Anemia of Pregnancy. Anyone of these conditions may be difficult at times to rule out, particularly Aplastic Anemia. Emphasis on the treatment is helpful. These cases are very resistant to the ordinary treatment for anemia and much time and expense is spent. Liver does not seem helpful. His conclusions are that best results are obtained by the administration of iron in combination with copper and at the same supplying the deficiency of Hydrochloric Acid.

Special attention is called to the following: (1) Blood count with low color index; (2) Achlorhydria; (3) combined Scleroses which may develop suddenly; (4) remissions.

Malignant Neutropenia, by Henry Jackson, et al., in Jan. A. M. A., Vol. 97, No. 20.

From a series of twenty cases of malignant neutropenia of varied etiology and thirteen with the classical picture of agranulocytic angina, the authors report recovery in fourteen through the use of intramuscular and intravenous injections of neucleotides (K 96).

Clinical hematologic improvement occurred quite consistently about the fifth day.

Response was obtained in cases which had not responded to transfusion.

Congestive Heart Failure—Effect of Digitalis on Dyspnoea, by T. R. Harrison, et al., in Archives of Internal Med., Vol. 48, No. 6.

The effect of digitalis was studied in forty-three patients with regular cardiac rhythm, who were ambulatory and who had little to no edema and had never had congestive heart failure.

Of nineteen patients with paroxysmal nocturnal dyspnoea, sixteen were relieved completely; of forty-three with dyspnoea brought on by exertion, definite benefit was noted in fourteen and no improvement in twelve, while two were made worse.

The authors conclude that digitalis is of great benefit in patients with paroxysmal dyspnoea and of some value in many patients with dyspnoea produced by exertion.

OPTHALMOLOGY

By Robert J. Warner, M.D.
Doctors Building. Nashville

Luxation of the Lens. O. Ringelhan and A. Elschnig. American Journal of Ophthalmology, November, 1931.

Ringelhan and Elschnig have studied the records of all cases of luxation of the lens seen in the Prague Eye Clinic from 1907 to 1930. The very detailed paper does not readily lend itself to abstracting and only a few points of interest can be mentioned.

The authors classify all cases of luxation of the lens in three groups: (a) luxation due to trauma; (b) luxation following intraocular pathology; (c) congenital luxation. The condition was found in approximately 0.15 per cent of the patients of the eye clinic.

The following is a summary of the indications accepted for operation: Where luxation into the vitreous is accompanied by detached retina, surgery is not indicated unless a painful glaucoma or iridocyclitis forces the issue. With long standing glaucoma, cyclodialysis should be tried first or, if the condition is accompanied by iridocyclitis, iridectomy should be done. If these procedures fail, extraction of the lens should be attempted. Extraction should be performed in recent cases in which the tension is increasing. In congenital cases, an interval of several months should intervene before the second eye is operated upon. In monocular subluxation, surgery is indicated if the lens becomes opaque. If both eyes are involved to the extent that the lens is rather freely movable, extraction should be done unless the patient can be carefully watched by a competent oculist as to the possible development of vitreous changes or glaucoma. The same principle applies in cases of luxation into the vitreous. With luxation or subluxation intion the anterior chamber and where the edge of the lens is visible in the pupillary area, extraction is indicated. The method of operating is discussed with special reference to congenital luxation and to luxation of the lens into the vitreous.

Subnormal Accommodation Following Iridocyclitis. N. Blatt. Archives of Ophthalmology, November, 1931.

Among one hundred and eight cases of iridocyclitis peracta the author found seventeen in which weakness of the accommodation remained as a permanent sequel. This weakness caused either reduced accommodative power or inability to maintain a certain degree of accommodation.

The latter was most likely due to a deficiency in the reserve of the accommodative power. The cause and the degree of the disturbance depended on the severity and the duration of the previous iridocyclitis or, in other words, on the intensity of the pathologic changes in the ciliary body. The general health and the original disease that caused the iridocyclitis had some influence also. The treatment consisted of the wearing of proper glasses, instillations of pilocarpine, application of the faradic current to the ciliary body and exercise.

Dermatitis of the Eyelids Caused by Dionin. C. L. Cummer. American Journal of Ophthalmology. December, 1931.

The author reports a case of dermatitis of the eyelids due to the regular instillation of dionin into the conjunctival sac. The drug had been used twice a day for eleven years in the treatment of incipient cataract, without causing dermatitis. During this time, the strength of the solution was raised from two to four per cent. Suddenly there developed an intense dermatitis which improved when the drug was removed, and recurred when it was resumed.

ORTHOPEDIC SURGERY

By Robert F. Patterson, M.D.

Medical Arts Building, Knoxville

Split Heel Approach in Osteomyelitis of Os Calcis. By F. A. Gaenslen. Journal Bone and Joint Surgery, October, 1931.

The usual lateral or medial approaches give inadequate exposure in extensive osteomyelitis of the os calcis. Early drainage is imperative in acute cases and often entails only a skin incision to allow pus to escape. Later it is necessary to deal with the chronic condition that usually supervenes. Approaches to bones in such cases must meet the following definite demands:

"(1) Adequate exposure to allow removal of all dead bone; (2) the provision so far as possible of a shallow wound with shelving edges to allow gradual filling in of soft parts. In other words to avoid over-hanging bone; (3) avoidance of separation of the periostiom beyond requirements as above; (4) reflection of soft parts including periostiom in a single thick flap on each side in order to lessen the opportunity for the extension of the infection in these flaps or for interference with their circulation, and (5) avoidance of injury of important soft parts. All these indications are admirably met in the operation here described. Space will not permit our going into the "pathological considerations." The technique of the operation is as follows:

An incision bisecting the heel extends from the level of the fifth metatarsal bone to above the tendo achilles insertion. It extends through the skin plantar aponeurosis and tendo achilles for 4 cm. above the insertion. The plantar artery and nerve are exposed in the distal portion of the wound and retracted to the medial side. The plantar quadratus muscle and long plantar ligaments are split longitudinally. The os calcis is now divided into an inner and outer half, the chisel passing obliquely from behind forward toward the dorsum so far as necessary to expose the lesion. All dead bone is now completely cleaned out and sinuses are disregarded. The wound is left wide open and packed lightly to the bottom with vaseline gauze and a cast is applied. Dressings are made at intervals of three weeks until final healing. Contrary to expectation this leaves a painless scar.

PEDIATRICS

By John M. Lee, M.D.

Doctors Building, Nashville

Wheezing Respiration in Children. Chevalier Jackson, M.D., Amer. Jour. Dis. of Children. January, 1931.

The author discusses the wheezing noise heard at the open mouth of the patient, and not heard with the stethoscope over the chest. The breathing of a child with normal air passages is noiseless. A wheezing audible without auscultation is produced by encroachment on the lumen of the airway by secretion, foreign body or tissue.

Wheezing respiration may be due to compression stenosis of the trachea or bronchus by foreign body outside these structures, by an enlarged thymus, substernal goiter, or adenopathy at the bifurcation of the trachea. Foreign body or secretion within these portions of the airway may result in wheezing. Cicatricial stensos may result from infection, prolonged sojourn of foreign body, bronchiectasis, syphilis, tuberculosis, or abscess and give wheezing respiration. This can only be determined by bronchoscopic examination.

One of the most important diagnostic signs of foreign body in the tracheobronchial tree is a wheezing heard at the open mouth. If a child has choked and gagged and this is followed by a wheeze it is absolutely certain that there is a foreign body lodged somewhere. If the wheeze disappears, its disappearance is more often due to the foreign body having gone deeper into the bronchi than to expulsion of the intruder. Numbers of patients after prolonged treatment for asthma are found on bronchoscopic examination to be suffering from foreign body, the removal of which promptly cures the asthma.

Acute infective laryngotracheitis, papillomas, pulmonary abscess, bronchiectasis and asthma may cause wheezing respiration. "All is not asthma that wheezes." This should be diagnosed only after all other possible causes for wheezing respiration have been ruled out. Physical examination, roentgenography and bronchoscopy should solve all cases.

ROENTGENOLOGY

By C. M. Hamilton, M.D., and H. M. King, M.D.
Doctors Building, Nashville

Epithelioma of the Skin. By Laurence Taussig, M.D., and Howard Morrow, M.D. Radiology, December, 1931. Reviewed by Dr. C. M. Hamilton.

Early treatment is necessary to obtain the best results in cutaneous neoplasms as well as those in remote locations. The nature of these growths should be recognized.

The cause of cancer is unknown, but heredity and irritation seem to influence its production. Tar will cause an epithelioma in workers in soot and tar. Tobacco apparently causes cancer of the lip and mouth. Ultraviolet light has been shown to be a factor in the production of carcinoma. Individuals with sandy complexion are subject to skin cancer, especially if exposed to the sun or winds. "Farmer's cancer" and "Sailor's cancer" are examples of irritation due to exposure. Skin cancers are prone to appear with advancing age. Keratoses are not considered malignant. The same cause may predispose to both keratoses and epitheliomata, but there is no proof that keratoses become malignant. Xeroderma pigmentosum invariably terminates into multiple skin neoplasms.

There are two types of skin malignancy; basal-cell epithelioma and squamous-cell epithelioma. Both features may occur in the mixed neoplasm.

Basal-cell epitheliomas occur in a number of clinical forms. It may be a nodule which does not break down or it may ulcerate early. The ulcer may be deep or superficial. The center may cicatrize leaving a smooth scar with rolled edges. The waxy borders and nodules are very characteristic. Fine vessels may traverse the lesion. It is usually located on middle third of the face and may be multiple. Basal cell epitheliomas develop slowly. It does not metastasize. It invades and destroys. It will recur if not completely removed.

Pathologically basal-cell epitheliomas contain cells resembling the basal-cell layer of the epidermis. The cells are compact and small. Cysts may appear in the growth. Cystic epitheliomas frequently occur about the eyes. They are resistant to radiation therapy. The average basal-cell epithelioma is sensitive to radiation.

The squamous-cell epithelioma is more malignant, metastasizes early, and is resistant to radiation. There are two forms; one is everted, mushroom-like and peduncular. The second is indurating and diffuse. The first type is less malignant but it may be converted into the indurating type at any time. The rate of growth varies. It varies with location. Those on ears are usually squamous-cell, but resemble basal-cell tumors in appearance and growth. Epitheliomas on the back of the hands are usually squamous-cell and slow to metastasize. Lip cancers are always squamous-cell.

The squamous-cell epitheliomas contain groups of prickle cells. Epithelial pearls may be absent. Growths with keratotic pearls are usually very malignant and very sensitive to radiation.

Between these two is a group containing cells with features of both clinically and microscopically. About 10 or 12 per cent belong in this mixed group.

In treating epitheliomas, certain factors are suitable for all types. There is no routine plan. Complete destruction is essential. Incomplete removal is worse than no treatment. It increases resistance and causes fibrosis which interferes. The danger of biopsy has been over estimated.

Radiation may be used alone or in combination with other measures. Radium has been used in regions where scarring is objectionable, such as eye-lids—x-ray may be used, however. Radium or radon was used exclusively by the authors. Forty to sixty mc. hrs. per square centimeter of surface are the usual doses. It is preferable to curette the lesion and cauterize the base before applying the radium. Lesions that have been unsuccessfully treated by radiation should be treated surgically.

Epithelioma of the ear can best be treated by excision. Radiation causes an ulceration which heals slowly. Epithelioma of the back of the hands responds to surgery and heals more readily. Epithelioma of the lip may be handled either surgically or by radiation.

Radiotherapy is indicated in the superficial cheilitis type of lesion. In case of squamous-cell epitheliomas, the regional lymphatics should be examined periodically. Experience has taught that it is not advisable to remove menaced lymphatics that are not involved. Prophylactic radiation is also questionable. Conservative measures and careful watching should be observed. Complete surgical removal is recommended for involved glands. If inoperable, gold seeds of radon may be inserted into the glands and the surrounding region. This may be augmented by external radiation. It may be possible to remove the glands later.

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MALIGNANT TUMORS OF THE THYROID GLAND*

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MY purpose in writing this paper is to call attention to a form of malignancy which in my opinion has somewhat escaped the spotlight of attention which is being played upon malignant tumors in general in this day of intensive effort on the part of the medical profession and the public at large to conquer this great problem.

Surgeons of experience in thyroid surgery are aware of the frequency of malignancy of the thyroid and are impressed with the advantages of recognizing the lesions in their incipiency, or better still, in their premalignant stages. The profession at large, however, does not seem to have as firm conviction on this subject as is true of premalignant lesions elsewhere. The public is almost totally uninformed as to the possibility of such lesions. No doctor nowadays regards a lump in the breast lightly and neither does the modern woman, but it is quite common for a physician to advise against removal of a nodular goiter because it is at the moment symptomless and it is almost unheard of for a patient to come to a surgeon for removal of a goiter in order to prevent possibility of cancer. Yet tumors of the thyroid are just as surely tumors as those of the breast and they carry almost, if not quite, the dangerous potentialities as tumors of the breast.

It is impossible to state with any approach to accuracy the incidence of malignant tumors of the thyroid in the general population. It is agreed by all writers of the subject that malignant tumors occur most commonly in pre-existent goiters. Crotti states that 90 per cent occur in preexistent goiter. Graham states that 90 per cent occur in foetal adenomata, but Reinhoff disagrees with him in his term foetal adenoma, although agreeing that practically a 100 per cent occur in an already diseased thyroid gland. It is natural, therefore, to expect the incidence of thyroid malignancy to be higher in the regions where goiter is endemic. Thus, in Berne, Kocher reported a malignant tumor of the thyroid in every 93 autopsies. Reinhoff states that in the United States in 1930 the incidence was one in 928 cases. In most of the large thyroid clinics the incidence of malignancy varies from .5 per cent to 2 per cent of total goiter cases. In my own series of 310 thyroidectomies there have been six malignant tumors, an incidence of 1.93 per cent. Of these four were carcinomata and two were sarcomata. They all occurred in preexistent nodular goiters.

CLASSIFICITION

The usual general classification of malignant tumors of the thyroid is:

1. Carcinoma.
2. Sarcoma.

Reinhoff makes the following statement: "No classification of these tumors so far has been at all comprehensive and the necessary information will be forthcoming only when clinicians in general are educated to the fact that nodular goiter in patients over 25 years of age should be treated as a surgical and not as a medical disease.

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*Read before the Tennessee State Medical Association, Knoxville, April 14, 15, 16, 1931.

"The cases in which a beginning malignant tumor has been inadvertently removed at operation are, so far, the only ones in which a cure has been obtained and the only ones from which it has been possible to study the origin and course of the disease.

"With our present knowledge temporizing with pathological changes in the thyroid gland is hazardous."

It is difficult to differentiate clinically carcinoma from sarcoma and from a clinical standpoint they are best discussed together. Carcinoma is most common in the fourth, fifth, and sixth decades. Sarcoma is most common in the sixth decade.

Crotti states that sarcoma is more frequent in youth and cancer more frequent in old age. Most writers state the reverse to be true.

Ewing reports cancers in patients at three and five years. Klose and Hellwig report cases at five, eleven, and sixteen years. I am reporting here a cancer in a boy of eleven years and two cases of sarcoma in women in the sixth decade.

From a pathological standpoint carcinoma of the thyroid is subdivided into:

1. True carcinoma.
2. Adenocarcinoma or malignant adenoma.
3. Papillomatous adenocarcinoma.

Some authorities doubt the existence of true sarcoma of the thyroid and among these the most eminent is Ewing. The majority of pathologists, however, including Reinhoff and Graham, use this classification.

The following subdivisions are recognized:

1. Mixed cell.
2. Spindle cell.
3. Round cell.
4. Fibrosarcoma.
5. Alveolar.
6. Osteosarcoma.
7. Angiosarcoma.

The most common are the mixed and spindle cell sarcoma. The most malignant is the round cell sarcoma.

From 60 per cent to 70 per cent of malignant thyroid tumors occur in women and from 30 per cent to 40 per cent in men.

Onset and Course of the Disease

As previously stated, malignant tumors of the thyroid almost always occur in pre-existing goiters and most commonly in goiters containing nodules.

The outstanding characteristic of such tumors is a sudden rapid increase in the rate of growth of a pre-existing goiter although some times a slowly growing goiter of many years standing may be malignant.

There will be an early complaint of hoarseness and interference with breathing and swallowing. There may be shooting pains in the gland and neck and some times down the arm. The patients gradually become emaciated and die of either invasion by the growth of vital structures such as the trachea and great vessels of the neck or of metastasis. The average duration of life in cancer is two years. Death from sarcoma is more rapid, the longest reported case being seventeen months, the shortest four weeks.

On examination the outstanding feature of the gland is its hardness which is absolutely unyielding. Next is fixation of the gland to the trachea and muscle with resulting immobility. There is often a loss of the former contour of the gland. There may be redness and local heat over the skin of the neck. There may be palpable lymph glands along the carotid sheaths. There is often dilatation of the superficial veins of the thorax due to obstruction by the mass above. The vocal cords are involved fairly early and in addition to hoarseness one can frequently demonstrate paralysis of one or both cords by use of the laryngeal mirror.

The lesions with which malignant tumors of the thyroid may be confused are thyroiditis of the phlegmonous type with its woody consistency and those benign adenomata with cartilaginous and calcareous deposits. Hematoma occasionally may be confusing but the sudden and dramatic occurrence of this is the key to its nature. Actinomycosis, tuberculosis, and syphilis of the thyroid have been mentioned by some writers as simulating malignancies, but they are so rare as to be negligible in a practical way.

Woody thyroiditis is most likely to be confusing, but fortunately operation is indicated in both lesions and the differentiation preoperatively is of only academic interest, although of greatest importance at operation for purposes of proper postoperative therapy and prognosis.

METASTASIS

Malignant tumors of the thyroid are prone to metastasize early and this occurs most commonly by the blood stream in both cancer and sarcoma, although the lymphatics also frequently are involved. Graham considers invasion of the blood vessels the most reliable microscopic sign of malignancy.

Erhardt found in 238 cases of carcinoma and sarcoma of the thyroid metastases as follows:

Lungs, 129; bones, 66; liver, 36; kidney, 20; pleura, 16; brain, 12; other organs, 13.

TREATMENT

In clinically malignant cases radical operation is seldom, if ever, curative, but often it is not possible to be absolutely certain that one is not dealing with thyroiditis or benign adenoma. In such cases it seems best to operate and combine radical removal of the gland with postoperative radiation if malignancy is proven. Pemberton expresses the situation very well when he says "the more clinical evidence one has for suspecting the diagnosis—malignancy—the less chance there is of effecting permanent cure."

In the late stages of this disease the results of surgery are discouraging, the immediate mortality being great and recurrences high.

Balfour and Herbst state that the duration of life following operation for sarcoma is six months, for carcinoma one year and five months, and for malignant papilloma two years and nine months. A. Kocher reports an immediate mortality of 10 per cent to 20 per cent, and recurrences in 84 per cent of the survivals, sarcoma recurring in 100 per cent, carcinoma in 90 per cent, and papilloma in 33 per cent.

The favorable cases are those in which the clinical diagnosis of malignancy is not made and the true nature of the tumor is discovered by the pathologist. A. Kocher reports ten such cases with 80 to 90 per cent cures from three to twenty years.

Favorable reports upon the use of radiation therapy, both x-ray and radium, have been made and Craver even reports one case of carcinoma alive and well seven years and eleven months. In general this treatment may be considered superior to surgery in the clearly defined late case of malignant tumors of the thyroid. In the early cases radical removal of the thyroid tumor followed by intensive radiation is preferable. In certain late cases where compression of the trachea is a very distressing symptom, Dr. Crile has advocated a decompression operation, dividing transversely the ribbon muscles and sternomastoid muscles and possibly resecting a portion of the tumor.

From a survey of the literature and from personal experience it seems clear that the treatment of clinically malignant tumors of the thyroid by any method now known is very discouraging and the only avenue of advance now open is that of prevention and that means the early removal of all nodular goiters unless complicated by unusual conditions which are insuperable contraindications.

Pemberton says the following: "Most of the patients with adenomatous goiter are advised to undergo operation not because they are having discomfort from the presence of the goiter but because experience has shown that in most instances the patient with a nodular goiter is assuming less risk in operation for its removal than in retention of the goiter. In 276 operations for cancer of the thyroid there was a pre-existing goiter in 87 per cent. Therefore, in no instance is it possible to assure a patient with nodular goiter that its retention is not associated with risk."

Graham, of the Cleveland Clinic, states that in 90 per cent of cancers of the thyroid there is a pre-existing thyroid tumor and further states that in 12 per cent of all foetal adenomata removed at his institution there is evidence of malignancy.

Reinhoff emphasizes the danger of malignant change in nodular goiters and urges their removal, pointing out the impossibility of clinically differentiating between benign and early malignant tumors.

CASE REPORTS

I wish to present six cases of malignant tumors of the thyroid, two sarcomata and four carcinomata, which I have operated upon within the last five years. They occurred in a series of 310 thyroidectomies and represent a percentage of 1.93 per cent.

Case 1—Miss Mary H., white woman, age 60.

Chief complaint, rapid enlargement of neck and pain radiating from neck to right parietal region. Had had small enlargement of thyroid many years with rapid increase in growth for the last two months.

Examination of neck revealed a large tumor of the neck involving both sides, but larger on the right and involving the lymph glands along the right carotid sheath. Very hard.

Radical thyroidectomy February 13th, 1928.

Microscopic diagnosis (Dr. Litterer), sarcoma round cell.

Result—Rapid recurrence and death in one month and three days. Autopsy revealed metastases to the lungs.

Case 2—Mrs. J. W. C., white woman, age 48.

Chief complaint, enlargement of neck. Duration three years. Growth not very rapid, but steady.

Examination of neck disclosed a nodule the size of a plum in the isthmus of the thyroid. Nodule was hard, rounded, smooth, and movable.

Impression, adenoma of the thyroid, probably benign.

Advice, removal as a prophylaxis against cancer.

Operation, March 8th, 1928.

Microscopic diagnosis by Dr. J. H. Litterer, adenocarcinoma confined within capsule. The patient was referred for deep x-ray therapy and so far is alive and well, and I believe is permanently cured.

Case 3—Mrs. John T., white woman, age 61.

Chief complaint, goiter smothering and shortness of breath, pain in the neck.

The goiter had existed for thirty-eight years with gradual growth for thirty-six years and rapid growth for the past two years during which the above symptoms developed.

Examination of the neck revealed an enormous enlargement of the thyroid, described by the interne as the size of a grape fruit, the enlargement being mainly in the left lobe and isthmus. The tumor was smooth over most of its surface but contained a few nodules. It was slightly fluctuant and slightly movable and moderately tender.

Impression: (1) Cystic adenoma; (2) Carcinoma suggested by rapid growth.

X-ray of chest negative.

Operation, November 23rd, 1929, thyroidectomy.

Microscopic diagnosis by Dr. J. H. Litterer. Adenocarcinoma in wall of cyst; x-ray advised but not received.

October 13th, 1930, seen in out-patient department with paralysis of lower extremities. X-ray revealed metastases to spine and chest. Not seen since. Probably dead.

Case 4—Mrs. J. C. B., white woman, age 50.

Chief complaint, painful swelling on right side of neck. Enlargement began one year ago and steadily increased. Has been tender for six months. Pain now radiates down right arm.

Examination reveals the right lobe of the thyroid moderately enlarged, very hard and very tender. Right cervical lymph glands greatly enlarged, very tender, slightly movable.

Impression, thyroiditis with adenitis. Carcinoma of thyroid considered.

Operation, November 23rd, 1929. Frozen section of thyroid and lymph gland diagnosed carcinoma by Dr. Litterer. Right lobe of thyroid completely removed along with the glands of the neck. Left lobe of thyroid resected. Patient referred for deep x-ray therapy.

Result—Living and well at present. Recent x-ray of chest and spine negative.

Case 5—Master Elmer Y., Jr., white boy, age 11.

Chief complaint, enlargement of neck, choking. Neck became conspicuously enlarged after whooping cough three years ago. Slow steady growth since then. Recently has had choking spells and cannot play without shortness of breath and exhaustion. Has coughed up a little blood the last day or two since having caught cold.

Examination reveals a poorly developed boy of 11 years breathing with a slight stridor and distinct effort. Temperature was 100 3/5 and pulse 104. The left lobe of the thyroid was greatly enlarged, very hard and nodular and fixed. Extends below clavicle. Right lobe slightly enlarged, but not so hard. Lymph gland the size of a small marble and along the right carotid sheath. X-ray of chest showed a suspicious shadow in the right lung.

Impression, carcinoma of the thyroid and acute bronchitis.

Advice, thyroidectomy as soon as cold subsides.

Operation, January 29th, 1930. Radical thyroidectomy.

Pathological report (Drs. J. H. Litterer of Nashville, and Allen Graham of Cleveland), malignant papillary adenoma, low grade.

Subsequently the glands of the right side of the neck were resected and the boy referred for radiation. He is clinically well at present and his general health is greatly improved. Recent x-ray of chest shows lungs clear.

Case 6—Mrs. Lizzie G., white woman, age 59.

Chief complaint, strangling, difficulty in swallowing, hoarseness, rapid enlargement of neck. Goiter present for forty-three years. Rapid growth for last three weeks and above symptoms developed since then.

Examination revealed a weak and tired woman, short of breath. The skin over the neck was reddish blue and hot. Thyroid greatly enlarged throughout but of nearly normal contour. Woody hardness. Gland absolutely fixed and immovable. Small glands palpable along right carotid sheath. Complete paralysis of right vocal cord.

Impression, malignancy or thyroiditis.

Operation, May 5th, 1930. Thyroidectomy, radical.

Pathological report (Dr. J. H. Litterer), mixed cell sarcoma.

Postoperative course: Very rapid recurrence and death June 6th, 1930.

SUMMARY

One may summarize the above material as follows:

1. Sarcoma and carcinoma occur in the thyroid gland with sufficient frequency to warrant keeping its possibility constantly in mind. Figures vary from .5 per cent to 2 per cent of all thyroids removed.

2. The vast majority of such tumors—approximately 90 per cent—occur in pre-existing nodular goiters.

3. The clinical differentiation between benign and malignant tumors of the thyroid gland is difficult and often impossible.

4. The cases of frankly malignant tumors of the thyroid gland are doomed to an early death, no matter what form of therapy is employed, though radiation probably is preferable to surgery.

5. The favorable cases are those which are not recognizable preoperatively as malignant, but which are diagnosed by the pathologist.

6. Six cases of malignant tumors out of 310 thyroidectomies are reported here—two sarcomata and four carcinomata, all developing in pre-existing nodular goiters.

CONCLUSIONS

From the above evidence the following conclusions are drawn:

1. All patients, of whatever age, presenting themselves with nodular goiters should be advised to have a resection of the gland, except in the presence of some compelling contraindications.

2. All suspected early cases of malignancy should have thyroidectomy and if the tumor proves malignant postoperative radiation therapy should follow.

3. Advanced cases of malignancy should have radiation in preference to surgery.

4. The only approach at present to the solution of this problem is in prophylactic removal of nodular goiters.

DISCUSSION

DR. J. A. CRISLER, JR. (Memphis): Dr. Shofner has given us a very comprehensive and concise survey of the subject of malignancies of the thyroid. I feel that he places the emphasis in the proper place, that is prevention. He urges that the profession at large learn to think of diseases of the thyroid in terms of malignancy, or rather pre-cancerous lesions, as well as in terms of metabolic disturbances.

When we state that a goiter patient has only one or two chances in a hundred of developing a cancer, we must at the same time recall that should that patient develop a frank clinical carcinoma or malignancy of the thyroid, he has only one chance in a thousand of recovering, whereas, if the goiter patient develops hyperthyroidism, we all know that he probably has ninety-nine chances in a hundred to recover.

In other words, it is doubtful if any frankly malignant thyroid, clinically malignant, has ever been permanently cured by any method of treatment, whereas, we all know that the treatment for hyperthyroidism carries an exceedingly low mortality.

My personal experience with malignancies of the thyroid gland is limited to six cases. They were all carcinoma and they all occurred in a pre-existing goiter. One of the cases was a younger person, but the other five occurred in patients in the fifth and sixth decade and all except one were women.

The first patient lived about a year and a half after thyroidectomy followed by deep x-ray therapy. The second patient was so far advanced when first seen that she was treated by deep x-ray alone. She lived only a week or ten days.

The third case had a recurrent nodule which was encapsulated and which was removed at operation, and the patient subsequently treated with x-ray. That patient is still alive and has no outward evidence of recurrence after about four years. I don't know the nature of the original operation that was done, I mean the type of goiter, but the nodule that we removed was an encapsulated malignant adenoma.

In another case, it has been about seven years since the operation, and we are beginning to doubt the correctness of the pathological diagnosis of cancer in that case, even though it was made by more than one pathologist.

I don't know whether the rest of you have had this experience or not, but we have had two or three pathological diagnoses of carcinoma in patients in whom time has proven that the pathological diagnosis was incorrect. Perhaps the microscopic criteria of malignancy of the thyroid in the absence of adenoma are not always infallible.

The fifth case was a man operated on six or seven months ago. He had a papillomatous adenocarcinoma. He is being treated by x-ray.

Lastly, a sixth case occurred in a young woman twenty-eight years of age, who was advised to have a thyroidectomy because she had an adenoma of the left lobe of the thyroid. She had no marked disturbance of metabolism; there was no suspicion whatever in my mind of malignancy, but after removal the adenoma proved to be malignant. That illustrates the point that Dr. Shofner has made and which I endorse, that with nodular goiters we should advise a thyroidectomy regardless of the patient's age or the metabolic rate.

In closing I want to ask Dr. Shofner one question about his sarcoma cases: Did they have any hyperthyroid symptoms? I believe that Rienhoff has found there is only one case of sarcoma in the literature that has shown an associated hyperthyroidism, the explanation being that sarcoma probably does not involve the epithelial structures.

DR. W. C. CHANEY (Memphis): Dr. Shofner, in calling our attention to the malignancies of the thyroid gland, has impressed upon us the great importance of regarding with suspicion every definite nodule of the thyroid.

Although the chance of malignancy is not more than one or two per cent, the risk of surgery is so slight that these nodules should be removed in every case. It has been my experience, however, that when a patient with a non-toxic adenoma is advised to have it taken out on account of the danger of malignancy, he will frequently consult another physician, who will tell him "to forget it." This is not good advice, yet in ninety-nine cases out of one hundred no malignancy will develop and the patient will feel that we are too radical in our ideas.

After the malignancy spreads to the surrounding tissues, it becomes fixed, of wood-like hardness, and usually involves the recurrent laryngeal nerve. At this stage the diagnosis is easy, but the prognosis is poor.

DR. C. R. CRUTCHFIELD (Nashville): I think Dr. Shofner has brought up an important point. I think the point he meant to emphasize was that nodular goiters are potentially malignant and that they should be treated as such. In the clinic in the last 800 cases we have had nine malignant goiters, seven of them with carcinoma and two of them with sarcoma.

We have one patient who is alive and well after eight years who had a single nodule at the left lobe of the thyroid, which was removed, and it was so hard and unusual that it was examined and reported to be sarcoma. This patient received x-ray therapy and is now living and well.

As Dr. Crisler said, we wonder now if the pathological report of that patient was correct. I saw the patient some few months ago and she is apparently in good health.

We have one other sarcoma that occurred in a woman sixty-two years of age that came up within two months, and she gave a history of not having had any enlargement at all of the thyroid prior to two months before. It came up very rapidly and she had all the symptoms of tracheal pressure with pressure on the recurrent laryngeal nerve, and the operation that Dr. Shofner has suggested, the decompression operation, which Dr. Judd has also suggested, was done to relieve her. This relieved her temporarily, but she died within three months.

We have several other cases of carcinoma, and some of them at the time of operation had the radium needle implantation, followed by x-ray therapy, but all of these have died except two, who have occurred within the last year and a half.

These two are living and well, but one of them has myxedema. The other patient has a suspicious chest.

Like Dr. Crisler, I just wonder if the chances of curing these cases are not very slim. I think the point that should be emphasized is that all nodular goiters should be submitted to pathological examination and we will be surprised how many are malignant.

It is true that we haven't had all of our goiters examined until recent years, but I think that a number of these rapidly recurring goiters which some of us see are probably malignant. They go home, we lose sight of them, and they die, and we never know whether they are malignant. I think all of them should be examined and should be followed up so we can report upon this important subject.

DR. R. G. WATERHOUSE (Knoxville): It is difficult for me to keep still when anyone mentions the subject of thyroid, but Dr. Shofner has so well covered the subject of malignancy of the thyroid that there is really nothing to add. I would like to emphasize the fact that no enlargement of the thyroid should be considered as innocent. The worst advice you can give those patients is, "Go ahead, it is not giving you any trouble now." As he has pointed out, ninety per cent of the malignancies of the thyroid gland occur in pre-existing thyroid enlargements.

The foetal type, as he has also pointed out, is the most usual one to become malignant. That may or may not be discreet, it may or may not accompany colloid enlargement of the gland.

I think that instead of saying goiter we should say lump in the thyroid. A lump in the thyroid should be regarded just as suspiciously as a lump in the breast.

A sudden increase in the size of a thyroid tumor usually means a hemorrhage into the gland, whereas a rapid increase means usually malignancy. When the patient complains of change of voice, of a feeling of suffocation, or particularly pain radiating in the direction of the ear, usually it is not only malignant, but inoperable in so far as removal of the entire malignancy is concerned.

DR. N. S. SHOFNER (Closing): I wish to thank the gentlemen for their very fine discussion.

In answer to the question as to whether or not the patients with sarcoma had evidence of hyperthyroidism, they did not.

This question is one which really should not be a controversial question, and I am delighted to know that there was no disagreement with the conclusions. I don't think that it would be possible for any doctor who had had any experience whatsoever with nodular goiters or cancers of the thyroid, of sarcoma, to disagree, because it isn't a personal opinion at all, it is simply that my own slight personal experience bears out the conclusions of every man who has had any considerable experience with this type of disease.

The point which I meant to bring out and which certainly was brought out very beautifully by the gentlemen who discussed the paper, is that nodular goiters do carry definite possibility of malignancy, just as Dr. Waterhouse mentioned that a lump in the breast carries a definite possibility of cancer. Nobody nowadays would advise a woman to leave a lump in the breast alone. I don't think that is done anywhere by anybody. On the other hand, as Dr. Chaney has said, oftentimes not only the layman but the physician will say: "Well, it is giving you no trouble and I have known many cases to live to a ripe old age with such lumps. I would just leave it alone." They may be sealing that patient's doom at the moment.

The important thing is to get it out if possible, to avoid malignancy.

TRANS-URETHRAL RESECTION OF PROSTATIC OBSTRUCTIONS*

Tom R. Barry, M.D., and Fred K. Garvey, M.D., Knoxville

THE ideal of any operative procedure should aim at the restoration of normal function, with a minimum mortality, and at a reasonable cost to the patient.

It is an incontrovertible fact that both the perineal and suprapubic operations have attained a high degree of efficiency in restoring satisfactory function, but both at rather a high cost to the patient, not only from a standpoint of mortality but also from an economic viewpoint.

If a procedure can be substituted, whose ultimate functional results are comparable to the open operation, carrying with it a negligible mortality and a minimum expense to the patient, it should be given precedence. We have, I believe, just such a substitute in the instrument devised by Stern and perfected and popularized by Davis.

Since the introduction by Bottini in 1874 of his galvano-cautery, many useful and ingenious instruments have been devised, notable among them are punches of Young, Caulk, McCarthy, Day, Collings, Folson, Kirwin, and others. Although these instruments have been of distinct value, they all fall short of the desired perfection in that they are adapted only to the relief of minor obstructions, the visualization is poor, and that satisfactory hemostasis is not provided.

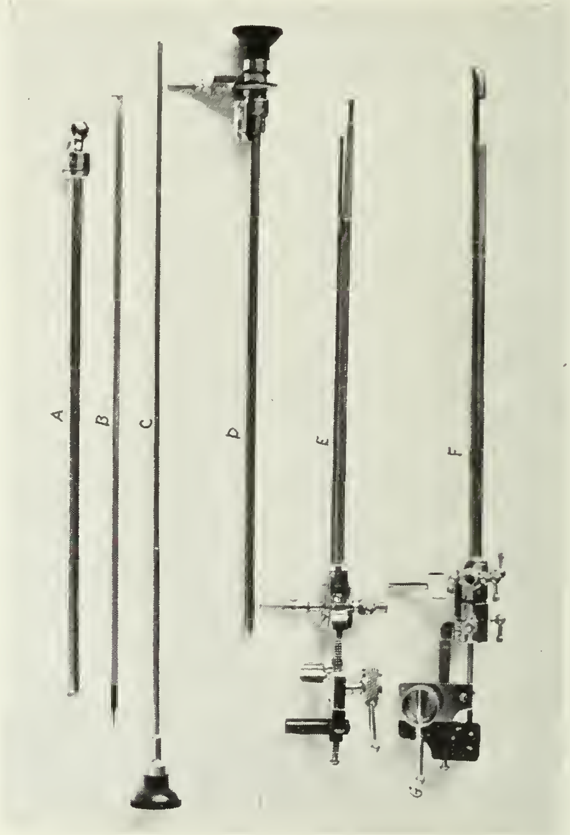

Fig. 1: A. Obturator. B. Cutting loop. C. Operating telescope. D. Examining telescope. E. Working parts, consisting of direct vision telescope, water conduit, light carrier, and cutting loop. F. Sheath, with working part in place. G. Rack and pinion for advancing and withdrawing loop.

In 1927, Dr. M. Stern devised an instrument which he chose to call the "resectoscope" (Fig. 1). Although perfect visualization of the bladder neck was possible with this instrument, there were many defects which Dr. Davis has corrected, and to him credit is due for perfecting and popularizing the technique of resection. Had it not been for his persistence and mechanical skill, this useful instrument would possibly have been classified as just another punch.

The equipment necessary for this operation is shown in Figs. 1 and 5, consisting of Stern's resectoscope, and the surgical arc cutting machine. This machine generates both a cutting and coagulating current. Changing from one current to the other is accomplished by different degrees of pressure on the foot switch. Davis prefers the old type high frequency machine for coagulation, but we have found no difference in the coagulating currents of the two machines.

The current used in resecting tissue is distinctly a cutting current, similar to that of the radio knife, and the tissue removed is unchanged histologically and permits of just as satisfactory biopsy as if removed with scalpel.

Although the diagnosis of prostatic obstruction is not within the scope of this paper, one cannot desist from again empha-

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*Read before Harlan County Medical Society, Harlan, Ky., July 25, 1932.

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sizing the importance of early recognition of this condition, before irreparable damage has been done not only to the kidneys and heart but to other vital organs as well. The only answer to this is that every male past 50 presenting himself for examination, should have a careful rectal examination together with an estimation of his residual urine. One however should be aware of the fact that enlargement of the prostate may take place in one of two directions, either toward the bladder or rectum, and if in the former direction, digital examination will reveal no enlargement. It is not uncommon to find complete retention in individuals with small prostates.

Residual urine in any patient, male or female, is a clear indication for cystoscopic study. Any physician who persists in repeated catheterizations of a patient without giving him the opportunity of a careful estimation of his surgical risk, and a chance for permanent relief of his obstruction, this physician deserves the same consideration he has given his patient.

The types of obstructions that can be relieved by resection are well summarized by Davis. "It is possible to resect any type of obstruction and to control hemorrhage during the operation and upon completion, leave the field absolutely free from hemorrhage." I agree with the above statement, but believe we will occasionally find a patient with an enormous prostate which fills the bladder to a point where distention and proper visualization is not possible, that open operation is advisable.

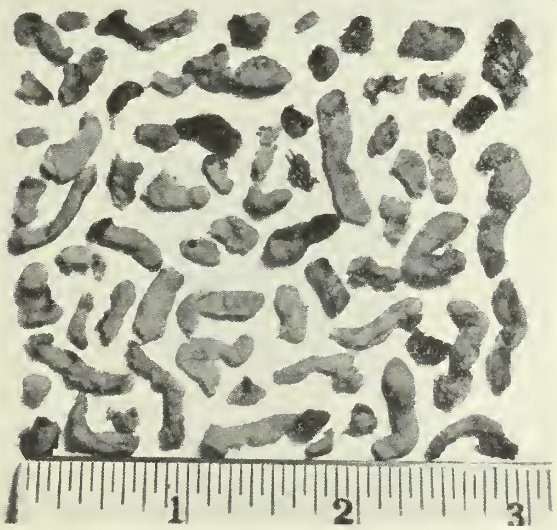

Fig. 3: Amount of tissue from lateral and median lobe enlargement removed from one patient with complete retention. He now has no residual and gets up once or twice at night.

I do believe however that at least 90-95 per cent of all obstructions are amenable to resection.

The objection which will undoubtedly be raised that the entire gland is not enucleated is not a valid one, since it has been clearly shown that the entire gland is not removed either by the perineal or suprapubic operation, as evidenced by many authentic cases of recurrence. (Wallace, Bryan, Takahashi, Herman, Albarran, Motz, Parearman, and others.) Davis reports more than 275 cases operated by this method in the past two and a half years, and that reoperation has not been necessary except in four, (excluding malignancies) all of which were his early cases, where insufficient tissue was removed.

Resection is especially valuable in relieving obstructions due to malignancies and is without the hazard of matastasis that other methods hold. Hemorrhage following resection in these cases is definitely less than in adenoma. Reoperation is often necessary if the growth is rapid.

Preoperative treatment differs only in extent from that used in prostatectomy.

Individuals with small residuals and otherwise good risks require no prepreparation. Poor risk cases should be as carefully prepared as heretofore. Generally speaking, good and fair risks require little if any preoperative treatment. Satisfactory blood ureas and phthalein are essential.

Anæsthesia is an important consideration. The minor obstructions such as bars or middle lobes may be satisfactorily performed by injecting only the sacral hiatus. In larger obstructions which require more than one hour, parasacral is indicated. We have found it unnecessary however to inject more than the first two foramina. This usually gives satisfactory anæsthesia for two hours.

Sacral anæsthesia is preceded two hours by sodium amytal compound, gr. 111, and one hour before going to the operating room

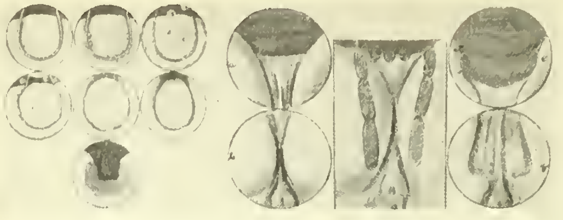

Fig. 4: Cutting loop as seen through direct vision telescope in various stages of operation, resulting in gutter formation. (Courtesy Dr. M. Stern.)

we give morphine, gr. 1/4, and scopolamin, gr. 1/300. Although we have used spinal in a few cases, we believe it distinctly more dangerous than sacral.

Technique of Operation. An intimate knowledge of the bladder neck is a prerequisite to a successful resection. The resectoscope is introduced into the bladder, the observation telescope is put in place, the bladder filled with solution, and a careful examination of the bladder neck is made, determining the obstructing portions and the amount of tissue to be removed, attention also being given to the urethral obstruction as well. Occasionally we will encounter enormous lobes in which the operator will elect to resect only one side at a time, the other side to be done some two or three weeks later.

The observation telescope is replaced by the operating unit and resections are begun as high up on the lateral wall as indicated. Parallel sections are cut and sufficiently deep to insure satisfactory function. This can only be learned through experience.

After each cut, the telescope (not the sheath) is withdrawn, the tissue removed from the end of the loop and reinserted and the resected surface is closely examined for bleeding.

If bleeding occurs, the points are coagulated with the same loop as used for cutting, but with an entirely different current. A field clear of blood is essential to a satisfactory operation. When sufficient tissue has been removed from the bladder neck, the instrument is withdrawn into the urethra and this is removed in a similar manner.

Davis has suggested using the verumontanum as the urethral landmark, since none of the obstructions ever occur distal to this.

With careful hemostasis, visualization is perfect at all times. The amount of tissue necessary to remove will of course depend upon the size of the prostate, but it has been surprising to me that a relatively small amount resected will give good function even in the large obstruction. Davis has removed as much as 200 pieces from each lobe. We have made no attempt to completely remove the prostate nor do we think it necessary. Caulk believes that infections are etiological factors in all obstructions, and has called attention to the rapid and permanent reduction in the size of the prostate after sufficient tissue has been removed to assure good drainage. He has followed his cases over a number of years and states that if they are relieved for six months, that the results are usually permanent.

Post operative treatment consists in the introduction of a large two-eyed catheter, which is left in place for three days. For the first 24 hours the urine varies from a pink to red color, and a few small blood clots will be seen. Sufficient gentle irrigation with warm boric acid solution to obviate the catheter blocking is insisted upon. We have encountered no serious bleeding and at the end of 24-48 hours the urine is clear. Large amounts of fluid by mouth are important. Food is allowed at the request of the patient which is usually the first day. The convalescence of the average patient is quite as uneventful as after ordinary cystoscopic examination. Morphia is given as indicated, but rarely more than one dose is required.

When the catheter is removed on the third day, voluntary urination will take place. There is usually stranguary and frequency for 48 hours which is controlled by santal oil and hyoscyamus. Complete control of urination is always established by the end of the third day.

The most troublesome complications we have had were those of epididymitis. We have had an incidence of about 20 per cent which compares unfavorably with that of Davis, 2 per cent. We believe that routine ligation of the vasa should be done upon admission to the hospital.

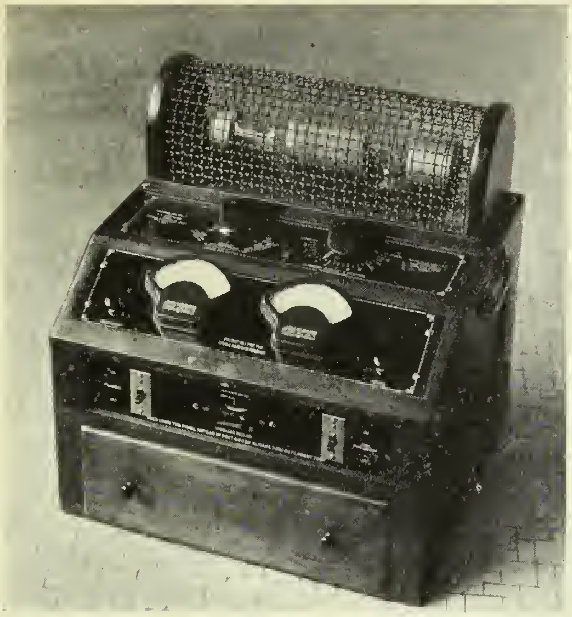

Fig. 5: Surgical arc cutting machine. This apparatus generates a high frequency cutting current, as well as a low coagulation current, changing from one to the other simply by different buttons on foot switch.

Davis reports no mortality in more than 275 consecutive operations, a record which will rarely be equaled.

For sake of comparison of morbidity and hospital expense, an analysis of an equal number of prostatectomized and resected cases was made. Those undergoing prostatectomy had an average hospital stay of 30 days, incurring a hospital expense of $184.96 per patient against an average of 8 days and average expense of $74.35. If we consider that 90 per cent of patients of prostatic age are dependent, this consideration is not to be ignored. The resected case may safely go back to work in two to three weeks.

Our functional results compare favorably with those obtained by open operations. Before operation the residuals in our cases ranged from one ounce to complete retention. Half of our series had large lateral lobes, or in addition middle lobe enlargement, which heretofore would unhesitatingly have been subjected to prostatectomy. One patient with a large malignant prostate has been relieved of the necessity of catheter life which he had been sentenced to 18 months before. At present he has no residual. Another about 84 years old with enormous prostatic enlargement and complete retention, had no residual following resection. I doubt if either of these individuals could have ever withstood an open operation. Postoperative residuals have not been seen except in one case, that of a bar, who now has one ounce.

CONCLUSIONS

1. That early diagosis of prostatic obstruction is of paramount importance.

2. That prostatic resection is not only feasible but should be given preference in the large majority of cases.

3. That mortality is almost negligible following this operation.

4. The sexual function after resection is undisturbed.

BIBLIOGRAPHY

1. Resection of Prostate Gland Obstructions With Stern's Resectoscope Equipment. T. M. Davis, M.D. Southern Medical Journal, Vol. XXII, June, 1929.

2. Resection of Prostate Gland Obstructions. T. M. Davis. Journal of the South Carolina Medical Association, Vol. XXVI, No. 9.

3. Resection of Prostate Gland Obstructions. T. M. Davis, M.D. Southern Medicine and Surgery, November, 1929.

4. The Instrumental Treatment of Prostatism. John R. Caulk. The Journal of Urology, Vol. XXVI, No. 1, July, 1931.

UTERINE HEMORRHAGE AND ITS TREATMENT*

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IN this article physiological menstruation is not to be considered. The different types of uterine hemorrhage that we will attempt to classify at times are very hard to diagnose.

The conditions causing uterine hemorrhage fall into two main groups: (1) those dependent on recent pregnancy, and (2) those independent of recent pregnancy. If we bear in mind these two main groups, a study of uterine hemorrhage becomes much easier.

UTERINE HEMORRHAGE DEPENDENT ON RECENT PREGNANCY

Uterine hemorrhage dependent on recent pregnancy occurs with:

1. Placenta Praevia, the hemorrhage rarely occurring under four months.
2. Premature separation of the placenta.
3. Retained Secundines.
4. Hydatidiform Mole.
5. Chorio-epithelioma,
5. Tubal Pregnancy.
7. Pregnancy in one horn of a bicornate uterus.

Premature Separation of the Placenta—In such a case, the physician is aware that pregnancy exists, and usually he understands the cause of the bleeding. His chief aim is to keep the patient quiet and prevent a miscarriage, if feasible.

It is not always easy for the average doctor to differentiate between placenta praevia and premature separation. I have been mistaken once and have seen other good general practitioners confuse the two conditions.

Retained Secundines—Here also the patient usually gives a history of pregnancy. Every physician, however, encounters patients who stoutly deny the possibility of pregnancy and do their best to mislead the physician in order that he may innocently dilate and curet, and bring away the fetus and membranes.

In the typical case in which no criminal operation has been attempted and in which the patient does her best to cooperate with the physician, there usually is a history of missing one or more menstrual periods, then bleeding has commenced, then a fetus has escaped with some water, and the afterbirth has or has not been expelled.

In such cases dilatation of the cervix and gentle curetting will bring away any remaining portion of the after-birth, and the diagnosis will be definitely settled by the finding of villi or shadows of villi in the tissue removed.

In taking the history one must ascertain, if possible, whether or not the fetus has been actually seen. If it has, well and good; if not tubal pregnancy must be borne in mind, because more than once the expulsion of a decidual cast from the uterus has been taken for a miscarriage and the existing tubal pregnancy completely overlooked.

Hydatidiform Mole—Now and again a pregnancy will apparently proceed normally for two or three months, and then there may be a little brownish discharge, or the patient may not feel particularly well. The case is watched for a month or two, when it is realized that something is radically wrong. The physician does not want to terminate a normal pregnancy, and yet he cannot afford to neglect his patient. Finally, it becomes clear that the uterus must be emptied and he dilates the cervix and at once encounters quantities of small cysts that vary in size, and remind one of the variation in size of the individual grapes seen when a grape-vine has worn out or gone to seed.

Now and then, as the uterus containing a hydatid mole increases in size, a multilocular cystic tumor develops on each side of the uterus. A knowledge of this fact materially aids one in making the diagnosis.

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*Read before the Tennessee State Medical Association, Knoxville, April 14, 15, 16, 1931.

These multilocular cysts are filled with relatively clear fluid. After removal of the mole, the cysts tend to disappear and the ovary may again assume its normal size.

Chorio-Epithelioma—Occasionally, after a hydatid mole has been removed, the patient continues to bleed. Examination discloses that the uterus is enlarged, and now and then a metastasis may be noted in the vagina or elsewhere. When the process is advanced hemoptysis may be noted, due to metastasis in the lung. After a hydatid mole has been removed one is always fearful that chorio-epithelioma may develop or may have existed prior to removal of the mole. In some cases of chorio-epithelioma no history of a previous mole can be elicited.

In order to differentiate between simple hydatid mole and chorio-epithelioma, it is necessary to examine a section of the wall of the uterus, and of course this is possible only after the organ has been removed. A diagnosis of chorio-epithelioma should never be made from scrapings. The finding of coagulation necrosis of the tissue lining the cavity of the uterus, when the diagnosis lies between chorio-epithelioma and hydatidiform mole, is strong presumptive evidence of malignancy, but even then it is unwise to make a flat-footed diagnosis. One must either go ahead and remove the uterus in suspicious cases or watch carefully for developments.

Tubal Pregnancy—Thirty years ago few physicians knew anything about tubal pregnancy. Today nearly all cases can be recognized when rupture occurs and many of them are diagnosed before rupture takes place, at a time when operation can be performed with relative ease and little danger to the patient. The previous history in the majority of these cases is well known; probably one pregnancy several years before and no conception since then, a period of a few days or a month late, then a little bleeding, more or less continuous, a little pain to the right or left of the uterus, and in some cases a premonition of impending danger. On pelvic examination, a small mass may be felt to one side of the uterus, and when a clot has formed in the pelvis this may be felt breaking up under the vaginal finger as rather firm jelly would do.

Shuman of Philadelphia says after making an exhaustive study in the city (Philadelphia) reveals one ectopic pregnancy to every 300 intra-uterine pregnancies. In Shuman's analysis of 409 cases, 91 patients or 21.46 per cent had not been pregnant.

STERILITY

It is generally believed that a period of sterility precedes an ectopic gestation, but the more recent writers think too much stress has been attached to the sterility idea. The average period of sterility in 308 cases was 3.95 years.

SYMPTOMS

Most of us have been taught that the cardinal symptoms are severe pain, pallor, fast thready pulse with symptoms of hemorrhage. The above is true in most cases, but the painful attacks should be divided into three kinds: (1) The mild pain is probably due to repeated small hemorrhages; (2) the colicky pain to tubal contractions; (3) the severe ripping, tearing or cutting to tubal abortion or rupture with intraperitoneal hemorrhage.

After searching the literature on this subject we should at least weigh well three types of uterine bleeding in making a diagnosis of ectopic pregnancy. First, and the most common, is after a varying period of amenorrhea. Second, coming at the regular menstrual period and lasting from two to eight weeks. Third, bleeding begins from one to three weeks after a normal period. The bleeding is rarely profuse, most of the patients will tell you that the amount of bleeding was about the same or less than that of menstruation, but usually darker and thicker. Morning nausea and enlargement of the breasts are usually absent. I have seen it a few times prerupture. Many patients complain of nausea and vomiting after an acute attack of pain, but it is questionable then as a diagnostic aid.

Fainting and shoulder pain are two symptoms which when complained of aid greatly in making a diagnosis. Fainting is said to be present in from 25 to 30 per cent of cases and the shoulder pain in from 20 to 25 per cent of the cases.

Cullen speaks of a few patients who had severe pain under the breast, also a few who had severe pain under the ribs. I have had two cases that looked all for the world like acute gall-bladder and one that looked so much like a ruptured peptic ulcer that I opened her in upper right rectus.

Bladder and Rectal Symptoms—Painful urination is complained of in about 15 per cent of cases and painful defecation is present in about half of ruptured ectopics.

HEMOGLOBIN

The hemoglobin varies from 20 to 90 per cent, owing to patient's condition when first seen, etc.

LEUCOCYTE COUNT

The leucocyte count varies from low normal to 30,000. Of course, much depends upon when the count is made whether there is an infected tube or an infected hematocele.

BLOOD SEDIMENTATION TEST

A sedimentation time of 30 minutes or less denotes an acute inflammatory process. Thirty to sixty minutes a subacute process and sixty or more minutes chronic or non-inflammatory process.

ASCHHEIM ZONDEK TEST

The Aschheim Zondek test should be done when possible if any doubt exists or when cases are under observation. One hundred hours are required to complete the test.

In 1918, Dr. Cullen noted a greenish hue to an umbilical area in a woman that had ruptured extra-uterine pregnancy. Since then many other such observations have been made. Dr. Cullen also states; it is hardly necessary to point out that a blue umbilicus does not always mean a tubal pregnancy; it merely indicates that there has been free blood in the abdomen. As the most frequent cause of free blood in the abdomen in the female is hemorrhage from a tubal pregnancy, this umbilical sign will usually indicate an extra-uterine pregnancy with hemorrhage.

Pregnancy in One Horn of a Bicornate Uterus—Pregnancy in one horn of a bicornate uterus is really extra-uterine, when considered from the standpoint of the non-pregnant horn. If uterine bleeding exists when there is a tubal pregnancy, we can expect, in some cases at least, bleeding from the non-pregnant horn of a bicornate uterus when pregnancy exists in the other horn.

UTERINE HEMORRHAGE OCCURRING INDEPENDENTLY OF RECENT PREGNANCY

Uterine hemorrhages occurring independently of recent pregnancy naturally fall into the following groups: (1) Hemorrhage due to constitutional condition; (2) hemorrhage due to benign changes in the mucosa of the cervix and body of the uterus; (3) hemorrhage due to malignant changes in the mucosa of the cervix and body of the uterus; (4) hemorrhage due to the presence of uterine tumors, and (5) hemorrhage due to diseases of the adnexa.

Hemorrhages Due to Constitutional Conditions—In cases of hemophilia there may be a tendency to very profuse periods. In some other diseases there is also a tendency to profuse hemorrhages at the periods. Such bleeding naturally comes under the care of a physician and not the surgeon, since these hemorrhages are incidental to the medical condition with which they are associated. The cause of the hemorrhage is evident, and as a rule the constitutional condition and not the local bleeding receives attention.

Hemorrhages Due to Benign Changes in the Mucous Membrane of Cervix and Body of Uterus—These include: (1) Cervical polypi; (2) polypi of the endometrium; (3) hyperplasia of the endometrium; (4) an increased tendency for the mucosa of the cervix and vagina to bleed in elderly persons.

Cervical Polypi: Simple polypi, no matter where situated, usually conform in histological appearance to the mucosa from which they arise. Cervical polypi consist of cervical mucosa. When the polyp originates far up in the cervical canal, it is composed chiefly of cervical glands and stroma.

If it springs from a point near the external os the surface of the polyp on one side may be covered by the squamous epithelium of the part.

Nature tends to rid herself of the polyp, and it is gradually extruded. During the process of extrusion it becomes engorged and there may be hemorrhage into the stroma of its tip. When the polyp is exposed and subjected to trauma its tip often shows an inflammatory reaction.

Cervical polypi often bleed a little, the patient complains of a slight intermenstrual bleeding, and in cases in which the surface of the polyp is inflamed there may be a slight purulent or watery discharge.

Polypi Springing from the Mucosa of Body of Uterus: These consist of uterine mucosa which has been forced into the cavity of the uterus, forming a tongue-like projection.

Polypi in the body of the uterus tend to produce excessive menstrual periods. There me be some slight intermenstrual bleeding as well.

Hyperplasia of the endometrium is invariably accompanied by profuse and prolonged menstrual periods. The condition is usually noted during the childbearing period.

After curettage the periods are usually relatively normal for from three to five months, and then curettage again becomes necessary. Sometimes, after four or five curettings, the patient is permanently relieved of her symptoms. Hyperplasia is one of the most frequent causes of profuse menstrual periods. There is usually no intermenstrual discharge, and on histological examination of the scrapings there is not the slightest resemblance to cancerous tissue.

Increased Tendency for the Mucosa of the Cervix and Vagina to Bleed in Elderly Women: In some elderly women there is marked atrophy of the vagina, and the retracted cervix merges almost imperceptibly into the vaginal mucosa. In some of these cases, no matter how careful the assistant is in washing up the vagina, there is a considerable amount of hemorrhage, blood oozing from fine points on the vulva, vagina and cervix. Any appreciable contact in such a case will tend to cause slight bleeding.

Hemorrhage Due to Malignant Changes in the Mucosa of the Cervix and the Body of the Uterus—These include: (1) Squamous-cell carcinoma of the cervix; (2) adenocarcinoma of the cervix; (3) adenocarcinoma of the body of the uterus (squamous-cell carcinoma of the body is rare), and (4) sarcoma of the endometrium.

The vaginal portion of the cervix is covered by squamous epithelium. The cervical canal is lined with mucosa which produces the mucus plug during pregnancy. The glands of this mucosa are of the racemose variety, and the epithelium lining them is of a very high cylindric type.

The cavity of the uterus is lined with a mucous membrane which usually varies from 2 to 4 mm. in thickness. Its glands are tubular, and between them is a very unusual stroma whose cells, as we have seen, become of the decidual type when pregnancy exists inside or outside the uterus.

From any of these three kinds of mucous membrane cancer may develop. Accordingly, we have three varieties of cancer of the uterus, squamous-cell carcinoma of the cervix, adenocarcinoma of the cervix, and adenocarcinoma of the body of the uterus.

Squamous-Cell Carcinoma of the Cervix: Advanced carcinoma of the cervix is readily recognized as a large friable growth which too frequently involves the entire cervix and extends to the surrounding vaginal mucosa.

As a result of the campaign of education waged by the American Society for the Control of Cancer and by local medical societies, patients are coming to the physician earlier and earlier, so that cases are seen now in which the physician is by no means sure whether the cervix is cancerous or not. These patients should be sent to the hospital to have a wedge of the suspicious area cut out and examined microscopically.

Adenocarcinoma of the Cervix: This frequently begins up in the cervical canal; but if the cylindric epithelium extends down beyond the external os, as it sometimes does, then the adenocarcinoma may be seen on vaginal examination. The diagnosis of this variety of gland cancer is sometimes difficult. It is the most malignant of all uterine cancers, and fortunately the least frequent.

Adenocarcinoma of the Body of the Uterus: This can be diagnosed with certainty only from scrapings. As a rule, the diagnosis is easy. When the operator removes a large amount of friable material with the curet he suspects cancer and hastens to make a microscopical examination of the sections. There is as much difference between the appearance of the normal lining of the uterus and cancerous tissue as there is between two different patterns of wall paper. The diagnosis is made from the general pattern of the growth, or from individual cell changes, or from both. Now and again several sections must be examined, and occasionally it may seem best to curet again in a month or two and examine fresh sections. This is, however, rarely necessary.

Sarcoma of the Endometrium: This condition is rare. When sarcoma is found in the uterus it is usually in the musculature or associated with uterine myomas.

Hemorrhage Due to Presence of Uterine Tumors—Tumors of the uterus are divisible into three main groups: (1) Myomas; (2) adenomyomas, and (3) sarcomas.

Uterine Myomas: These are very common and in the beginning are usually interstitial; but as they grow many of them become subperitoneal and are either sessile or pedunculated. Some of them project into the cavity of the uterus. A myoma may reach large proportions without in any way influencing menstruation, but when it encroaches on the uterine cavity the periods are liable to be prolonged. A myoma not over 2 or 3 cm. in diameter, projecting well into the cavity of the uterus, may cause such severe menstrual hemorrhage that the patient is almost exsanguinated.

In some cases the submucous myoma becomes necrotic in its more dependent parts and causes a foul and almost continuous watery discharge from the uterus. On examination, a portion of the growth may be seen extending through the cervix. This tissue often feels soft, but on traction is found to be tough. Cancerous tissue, on the other hand is friable. When a large submucous myoma has been expelled from the uterus it may completely fill the vagina. In such a case the cervix can be recognized as a smooth ring encircling the pedicle of the tumor.

Adenomyomas of the Uterus: These form an interesting group of tumors. Although in a certain percentage of these cases the uterus is not enlarged, in the majority of them it is at least twice the normal size. The inner muscular layers of the uterus are transformed into a coarse, diffuse, myomatous tissue into which the uterine mucosa flows. The thickening may be limited to the anterior or posterior wall, or form a mantle around the entire uterine cavity. In time, portions of the adenomyoma may be forced to the outer surface, forming subperitoneal adenomyomas, or into the cavity, producing submucous adenomyomas. In many cases there are also a few small, discreet myomas scattered throughout the uterus.

Adenomyomas generally cause a very profuse and prolonged menstruation but no intermenstrual bleeding. At the period there may be a grinding pain in the uterus, due undoubtedly to swelling of the many areas of uterine mucosa in the diffuse growth of the uterine wall. Curettage, as a rule, yields perfectly normal mucosa. When adenomyoma exists, the uterus tends to become adherent to the surrounding structures.

Sarcomas: Uterine sarcomas are relatively rare. In from 1 to 2 per cent they are associated with uterine myomas. Should a sarcoma develop in the endometrium, it can be diagnosed from scrapings; but in the average case it will be diagnosed as a myoma, and its true character detected only when the abdomen is open, or when the tumor has been cut into. Typical sarcoma on section differs markedly from myoma. It is homogeneous, porklike, not striated, and, as a rule, is easily broken up with the finger, whereas the finger makes no impression whatever on the myoma.

Occasionally, portions of a sarcoma become submucous and undergo necrosis and gradual disintegration. In such cases there is a good deal of foul vaginal discharge. Microscopical examination of pieces of the tissue will give the correct diagnosis, although the differentiation between a degenerating myoma and sarcoma is at times somewhat puzzling. When considering uterine tumors and their differentiation from cancer we must always remember that the two conditions are occasionally associated in the same uterus.

Uterine Hemorrhages Due to Diseases of the Adnexa—Tubes: One of the cardinal signs in tubal pregnancy is uterine bleeding. In cases of purulent salpingitis, also, uterine hemorrhage is a common symptom. Time and again the operator is in doubt as to whether the given case is one of tubal pregnancy or pelvic inflammation. Sometimes he makes a diagnosis of pelvic infection and finds tubal pregnancy, and on the other hand he may diagnose extrauterine pregnancy only to find that he is dealing with pelvic infection. Fortunately, in both instances it is necessary to open the abdomen and the temporary error in diagnosis does not in any way militate against the patient's welfare. If it were essential to make an absolute diagnosis before operation, a curettage would usually reveal decidua when a pregnancy existed, but there would be no sign of decidua in the inflammatory case.

Ovaries: Inflammatory diseases of the ovaries are invariably secondary to and associated with salpingitis; consequently, what has been said about uterine bleeding associated with pus tubes applies to inflammation of the ovary.

Ovarian cysts and ovarian tumors occasionally cause slight uterine bleeding. The presence of the tumor when found to be independent of the uterus usually gives us the clue as to the hemorrhage, and with the removal of the ovarian growth the bleeding ceases. It is always well, however, to examine the uterus carefully if the bleeding has been severe.

TREATMENT

Now a word as to treatment. I shall say nothing as to the handling of premature separation of the placenta, retained membranes or hydatid mole; you are as familiar with the proper method of treatment as I am. When a hydatid mole has been removed, the patient should be carefully watched for months and should bleeding be noted, the uterus should be curetted at once and chorio-epithelioma kept in mind.

When possible, tubal pregnancy should be diagnosed and operated upon before rupture. When the patient is shocked and almost in extremis, one has a strong impulse to operate immediately; but if she can be tided over for a short time and transfused just before or at the beginning of the operation, the chances are very much better. Transfusion works miracles in such cases. One point in the technic when the abdomen is full of blood: Just as soon as the tube has been clamped, so that its bleeding has been checked, and prior to its removal, it is well to pack a large roll of gauze into each flank, and a large Mikulicz pad into the pelvis. By the time the operator has removed the tube these three pieces of gauze will have soaked up a large part of the free blood and much time will be saved.

Hyperplasia in young people calls for curettage every few months if the bleeding is excessive. In patients at or near the menopause, a dose of radium will bring on the menopause.

In carcinoma of the cervix, when the growth is limited to the cervix, the uterus freely movable and the patient a good risk, the uterus is removed. On the other hand, if the patient is very anemic, has renal or cardiac trouble, or if the growth has extended to the vaginal vault, then radium seems to offer the best chance of relief.

In cases of carcinoma of the body of the uterus an abdominal hysterectomy is done. In such cases first close the cervix with two mattress sutures, in order that none of the contents of the uterine cavity may escape. The vagina is then tightly packed with gauze and the abdomen opened. As all of you know, hysterectomy for carcinoma of the body of the uterus usually gives excellent and permanent results.

Fibroids: Small and medium-sized fibroids yield readily to radium and x-ray, but one is not always sure of the diagnosis.

The treatment of fibroids is under the careful scrutiny of many surgeons and radiologists, and in due time we shall have clear indications when to operate and when to rely on radium or the x-ray. In the meantime our knowledge as to the causes of uterine hemorrhage is increasing steadily, and womankind is receiving better surgical care each year.

Summary: Each case of uterine hemorrhage should be thought of as one problem for solution, solved, and proper treatment instituted.

Ninety-ninth Annual Meeting

TENNESSEE
STATE MEDICAL
ASSOCIATION

Memphis April 12, 13, 14, 1932

BACKACHE FROM A UROLOGICAL ASPECT*

George R. Livermore, M.D., Memphis

PATENT medicine advertisements are prone to attribute backache to disease of the kidneys, but it is a fact that many serious affections of the kidney cause little or no pain in the back. In fact it is not unusual to find a shadow of a symptomless renal or ureteral calculus in a patient who is undergoing a general examination, or in one upon whom an x-ray is made after a gun or pistol wound.

That kidney diseases, as well as those of other genito-urinary organs, do produce backache, and this, often of the most intense character, there is no doubt. Consequently I shall endeavor to give you a brief summary of the conditions that do cause it, and our methods for differentiating it from the pain due to bone and joint lesions.

In kidney disease as well as that of almost any viscous there is usually referred pain and according to Head, "the kidney is particularly associated with the area of distribution of the tenth dorsal, and to a lesser degree with that of the eleventh and twelfth dorsal and the first lumbar segments."

Seminal Vesiculitis and Prostatitis: Both acute and chronic, are frequent causes of backache, and both are overlooked probably more often than any other one condition. Prostatitis is so universal, in fact, few men escape it; not only the sufferer from gonorrhoea, but also those who have never had it; because there are very few men who have not indulged in the enjoyable pastime, known, in these ultra modern times, as petting; or who have not suffered from ungratified sexual desire, with consequent congestion and enlargement of the prostate and seminal vesicles. This passive congestion of the prostate and vesicles makes these strictures especially fertile soil for the reception of bacteria and with the close proximity of the rectum, teeming with colon bacilli, staplylo-cocci, streptococci, etc., it is a very easy matter for these organisms to be carried by the lymphatics or by direct continuity to the prostate and vesicles, thus starting a prostatitis and seminal vesiculitis. Being usually low grade and with the marked resistance of youth, the infection is held in check until repeated congestion lessens the patient's resistance and the effect of pus absorption manifests itself in general debility, nervousness, backache, arthritis, premature ejaculations, frequency, nocturnal pollutions, often blood stained, and burning on urination, nocturia and sometimes even loss of sexual vigor.

The differential diagnosis is not always easy, especially in cases where the prostate is only slightly enlarged and the vesicles barely palpable. It is a fact, however, that marked prostatitis may be present without enlargement, and without symptoms directly referable to it. (Livermore: Gonorrhoea and Kindred Affections in the Male.)

Examination of the prostatic and vesicular secretion, expressed after massage, will show pus and bacteria. Some urologists think three or four pus cells to the high powered field is a normal prostatis secretion. I do not agree with this, but think it is what is found in the average case, due as already stated to the prevalence of chronic prostatitis. It is true, too, that often our first examination of the expressed fluid shows very few pus cells, but after several massages or following the passage of a sound or urethral dilator there will be a marked increase in their number.

In the typical case, with backache, pains in the perineum, pain or heaviness in the testicles, frequency, nocturia, premature ejaculations which may be blood stained, lassitude and loss of sexual vigor, the diagnosis is easy, but in that type where the chief symptom is backache and an x-ray shows definite evidence of spondylitis, and with a small prostate and barely palpable vesicles, with only a few pus cells in the fluid, expressed after massage, it is rather difficult to convince the patient that his backache is due to inflammation of his prostate and vesicles, especially when he has never had any venereal disease and no definite symptoms pointing to his genito-urinary organs.

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*Read before the American Orthopaedic Association, 1931.

I rely for diagnosis on the type of the backache, its intermittent character, its usual extention down the back of the thigh and back and outer side of leg and along the posterior limit of the crest of the ilium; its improvement on exercise and its return and exaccerbation on sitting for any length of time, *e.g.*, when playing cards or when riding in an auto or railroad car. The feel of the prostate is also important as well as the character and contents of the fluid, expressed on massage, and the fact that the vesicles are palpable. (You cannot palpate a normal vesicle.)

In some cases the pain of seminal vesiculitis and prostatitis may be so severe as to almost simulate renal colic. I am reminded of a case, a man 49 years of age seen by Dr. Willis Campbell and the essayist, in whom the pain in the left loin, coming on suddenly when the patient stooped to pick up something off the floor, was so severe, with radiation down the back of the thigh, with a dull ache of the entire left leg, and a history of the passage of a ureteral calculus ten years before, that a diagnosis of recurrent ureteral calculus had been made. Cystoscopy and x-ray were done and no stone shown and no pus found in the urine from either kidney. The x-ray made by the urologist, however, did show a definite spondylitis and it was this factor and the absence of urological findings that made the correct diagnosis, which was proven by the entire relief given the patient by prostatic and vesicular massage and physico therapy. (Films).

Carcinoma of the Prostate: Backache, low lumbar and sacral in location and usually severe, frequently accompanies carcinoma of the prostate. This is especially marked when there has been metastasis to the lumbar spine and pelvic bones.

In the backache of late carcinoma where there is bony hardness of the prostate and when metastasis has occurred, the x-ray makes the diagnosis positive; but in the early cases when the prostate is of doubtful induration and no metastasis has occurred, the diagnosis can only be confirmed by obtaining a section from the prostate for microscopical examination. This may be done by using Barringer's prostatis needle through the perineum, or by the method used in Lowsley's Clinic where a No. 18 Luer needle is thrust through the perineum into each lobe of the prostate and by negative pressure from a 5 c.c. Leur syringe small fragments of prostatic tissue are sucked into the syringe and examined for carcinoma.

Renal and Ureteral Calculi: These are particularly prone to cause backache, ranging all the way from vague indefinite pains to the most agonizing colic. A sense of weight and dragging, however, when exercising or being on the feet, is especially frequent, due in most cases to a partial obstruction, with a damming back of the urine, and back pressure on the ureter and kidney pelvis, with consequent dilatation of the ureter and pelvis. (Hydro-ureter and Hydronephrosis).

The differential diagnosis is in most cases clear cut with the finding of pus, blood and bacteria in the urine, and with cystoscopy and pyeloureterograms, kidney and ureteral stones are usually clearly shown. In those cases, however, in which no shadow is thrown on the x-ray plate, where the pyeloureterogram is negative and only an occasional pus and blood cell can be found in the kidney specimens and there is definite evidence of spondylitis, who can say that spondylitis is not responsible for the symptoms? It is in this type of case, where the refinements of urology are necessary to clear up the diagnosis. The wax tipped ureteral catheter may show scratches caused by a stone. Failing in this, intravenous pyelography often demonstrates the calculus, and if this fails the injection of air through the ureteral catheter is another refinement that usually brings the calculus into view. This last, however, is not without the danger of air embolism, although

Thompson's series of cases without a mishap makes it seem so. (J. P. E. film).

Ptosed and Movable Kidneys: It is remarkable that some ptosed and freely movable or floating kidneys cause no pain at all. This is due to the fact that the ureter is not kinked and there is no interference with drainage, for so long as there is no obstruction to the flow of urine down the ureter, the patient will experience no pain. The character of the pain in the ptosed and movable kidneys where obstruction exists, is of a dull ache in character, often with exaccerbations of sharp spasm, so similar to that of spondylitis and lumbago. The differential diagnosis here is easy, because the definite diagnostic data, obtained by cystoscopy and x-ray, is conclusive evidence of the causative factor in the production of the pain.

All obstructive lesions of the ureter, stricture, kinks, stone, tumors and pressure from without, such as a pregnant uterus or abdominal or pelvic tumor cause obstruction and back pressure with resultant dilation of the ureter and pelvis of the kidney and pain. The differential diagnosis of all these conditions can usually be promptly made by cystoscopy and pyeloureterograms. Where spondylitis exists in conjunction with any of the above conditions, it behooves the urologist to call in the orthopedic surgeon to rule out spondylitis as a factor in the production of the pain.

Nephritis: The congestion due to nephritis may or may not cause pain in the back. It has been the essayist's experience that backache is especially present when hemorrhagic nephritis occurs. The differential diagnosis is usually easy, because the condition can be so definitely proven by an examination of the urine, together with the systemic symptoms such as nausea, vomiting, oedema, headache and increased blood pressure.

The Acute and Chronic Pyogenic Inflammations of the Kidney. In these conditions congestion and stasis often produce backache, ranging from a dull heavy ache to the most intense kidney colic.

The differential diagnosis is also easy in the acute types, because of the urinary findings and general symptoms. In the chronic types where only an occasional pus cell is found in the urine, where the backache and tenderness is out of proportion to the urinary findings and the x-ray demonstrates a spondylitis, it may tax our ingenuity to arrive at the real solution of the problem. All the refinements of a urologic as well as an orthopedic diagnosis must be used in order to make a correct diagnosis.

CONCLUSIONS

1. The differential diagnosis between Orthopedic and Urologic lesions is often difficult.

2. Backache is one of the most confusing symptoms.

3. A closer co-operation between the Orthopedist and the Urologist will solve many problems that would prove baffling to either alone.

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H. H. SHOULDERS, M.D., Editor and Secretary

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EDITORIAL

SOME DANGEROUS THINKING

A little study of the literature sent out by the Committee on the Cost of Medical Care gives one an insight into the type of thinking that is being done by those in immediate charge of this particular investigation.

There is an old proverb to this effect: "As a man thinketh so is he." No one has yet disputed this philosophy. It is important that we know how these people are thinking.

As evidence of the type of thinking that is being done, the following facts, together with their interpretation, are cited. Figures are set up to show that a fairly large percentage of people in a certain community did not receive medical care in a certain period of time. These statements of fact are interpreted to mean that the machinery, or mechanism, by which medical services are delivered to people is at fault. Vital facts pertaining to the whole matter are left completely out of the picture. For example, the report does not show, that services were sought and not obtainable. The report shows simply that services were not delivered. They leave out of consideration the fact that a fairly large number of people will not avail themselves of free medical and hospital services when available, nor do they take into account the fact that a fair number of people regard it as a sin to have a doctor at all.

Another example of the type of thinking: An old estimate of the value of human life arrived at by some sort of statistical analysis is set up as an actual value of human life in the United States. These values are placed in round numbers. According to figures each human is worth $10,000 and the entire human population in the United States is worth $1,500,000,000,000.00. The human population includes criminals, the insane, decrepids, in fact, all the people who are a burden to society and not an economic asset at all. No one can dispute this valuation, even though it is many times the value of all other assets combined (placed by experts at $329,000,000,000). I would not dispute the value of it were it three times the amount stated, because from a personal standpoint there are human values that I rate above all of it, even though their economic worth to me is nothing at all. So to use such arbitrary values as a basis for justifying expenditures is utterly ridiculous.

We lose sight of the fact that people have sacrificed lives which they themselves would value highly to obtain the thing we call liberty, the value or price of which no one can fix.

Another example is that one week per year is lost from work on account of illness and the value of this time is set up as a loss to humanity. The fact that there are seven millions of unemployed people ready to take the jobs of those who are disabled is lost sight of. The disability of one will be the good fortune of another, so the public as a whole does not suffer a loss at all. One individual loses, another individual gains and the work is done.

All such statistical analyses disregard the most vital and fundamental facts pertaining to human nature, namely the psychology of humans. The human has ambitions, hopes, desires, prejudices, likes and dislikes, etc., which other animals do not possess. No one can place a value on each of these attributes, still these very attributes make human values.

The man with a passion for drink is not governed by a statistical analysis dealing with the harmful influence of drink. If the passion follows other lines, figures do not have material influence. If one throws emotions and sentiments to the winds there are many things that have a value which would cease to have a value, so such valuations are nonsense to start with.

In a recent article Mr. Babson discussed this subject: "Why Three Thousand Economists Were All Wrong." The essence of his explanation is that they disregarded the factor of human psychology. These economists were experts, too.

It is alleged now by experts that the depression is exaggerated and prolonged because of the emotions of fear, apprehension, etc.

In this report a direct criticism of the medical profession is skillfully avoided, though it is insisted that the machinery by which medical service is delivered is not what it ought to be.

We don't suppose that anybody would insist that our facilities for medical service are just what they might be, nor can it be insisted that any other human organization in existence is perfect. It can be successfully maintained that in the last fifty years the system of medical service has given a good account of itself. Human misery has been diminished. Human life has been prolonged and some diseases have almost disappeared. All these things have happened under the very faulty system now in vogue, and even before vast sums of money were appropriated for investigations, endowments, etc.

The general public may read these reports and be misguided by them into attempting to bring about radical changes in our whole system of government, medical service included.

We must bear in mind that there are people of intelligence now living who insist that religion is all wrong. Others insist that our entire governmental system is wrong and most of these critics are willing to set themselves up as authorities, or dictators, provided they are well financed while engaged in the activity.

In the constitution of the United States emphasis was placed on the "pursuit of happiness" by the individual. A government was set up for the purpose of guaranteeing to the individual the high privilege of pursuing happines in his own way. The pursuit of happiness has no economic value that one can define, though it is a mighty driving force. One man cannot define for another what happiness is, though there are those who would define it and then put all others in the pursuit of the thing they have so defined. This, of course, cannot be done, but an awful tragedy can be brought about in an attempt to do it.

Bad thinking is a dangerous thing to follow, no difference who does it.

DEATHS

John J. Abernathy, Acton; Memphis Hospital Medical College, 1903; aged 58; died, Dec. 31, 1931, in the Baptist Hospital, Memphis.

T. J. Hardison, Carters Creek; University of Nashville, Medical College, 1880; aged 76; died, January 30, 1932.

RESOLUTIONS

DR. J. P. TAYLOR

Dr. J. P. Taylor was born at Laurel, Md., August 8, 1868. He graduated in Medicine from Vanderbilt University Medical School in 1896 and located at Limestone, Tenn., where he remained in practice for one year, after which he was attending physician at the Inman Branch Prison at Sequatchie, Tenn., for two years, and then located in Bedford County at Haley, later moving to Wartrace. Over a period of thirty-two years he was actively engaged in the practice of Medicine in Bedford County serving his fellow-man with untiring energy, devotion and ability which endeared him to a large clientele and a host of friends up until the time of his death on November 1, 1931.

Dr. Taylor was a regular attendant at Medical Society meetings. He served as Counselor of the Fifth District of Tennessee and by virtue of that fact was a member of the House of Delegates for more than ten years in which capacity he served with a firm belief in the high ideals of medical ethics and was a loyal supporter of those measures which had as their object the promotion and uplift of organized medicine.

Be It Resolved, By the members of the Bedford County Medical Society, in regular session assembled, that we extend to the bereaved family our sincere and heartfelt sympathy and unite with the relatives and friends in their grief for the loss of this loved one, friend and fellow physician, whose departure not only takes from the family the husband and father, but removes from our organization one of its most faithful and devoted members.

And, Be It Further Resolved, That a copy of these resolutions be spread upon the minutes of our Society, a copy sent to the family and a copy sent to the State Secretary for publication in the Journal of the Tennessee State Medical Association.

S. S. MOODY,
B. L. BURDETTE,
JAS. L. MORTON,
Committee.

DR. H. B. HUGHES

At the January meeting of the Maury County Medical Society, it was requested that the Secretary, with Dr. Webb and Dr. Jones, draw resolutions on the death of Dr. Hughes and place them in the minutes and send copy to the family. It is as follows:

Be It Resolved, That in the death of Dr. H. B. Hughes the Maury County Medical Society has sustained an overwhelming loss. He was a pioneer in the practice of medicine in Maury County and a loyal member of this Society. The practice of medicine was, of all his interests, the most dominant. For fifty years he gave to it liberally of his time, his strength and his ability.

He was broad in his religious sympathies and tolerant in his views. He was abundantly generous and his benefactions to medicine stimulated and, in many cases, made possible the progress of medicine in his community.

The members of the Maury County Medical Society record their deep sorrow over the passing of a valuable member and close friend for so many years, and express to his bereaved family their deepest sympathy.

DR. W. R. WEBB,
DR. J. H. JONES,
DR. C. D. WALTON, *Sec'y.*

NEWS NOTES AND COMMENTS

Dr. A. K. Turner, of Knoxville, has opened his office in Bristol.

A number of press reports recorded the illness of three prominent doctors: Drs. W. K. Sheddan, of Columbia; Willis C. Campbell, of Memphis, and Robert Pillow, Jr., of Columbia. From last reports all were well or improving.

Dr. J. S. Blair, of Kingsport, recently suffered loss by having his office looted. Drugs and instruments were taken by the thief.

Dr. Posegate Wood, of Knoxville, has opened his office in Johnson City. His practice is limited to Pediatrics.

Dr. W. M. Copenhaver addressed the regular meeting of the Knoxville Medical Secretaries Society at the January meeting.

Dr. W. P. Moore has moved from College Grove to Wartrace.

Dr. George L. Rea and Dr. H. C. Evans have recently located in New Tazewell.

Dr. Ira Tatum, of Gleason, has announced his candidacy for election to the next Legislature.

Dr. W. L. McCaleb has moved to Tracy City and opened an office over the First National Bank.

The Williamson County Medical Society began the New Year auspiciously. At the January meeting every member except one was present and the payment of dues by those present was one hundred per cent.

Dr. Paul Titus, 1015 Highland Building, Pittsburgh, Pennsylvania, will be glad to furnish those interested with full information about the next examination to be held by the American Board of Obstetrics and Gynecology.

Dr. J. L. Minor, of Cordova, has been critically ill in the Baptist Hospital, Memphis.

Dr. H. P. Hewitt, of Chattanooga, has returned from New York after taking a six months postgraduate course at the New York Lying-In Hospital. He has re-opened his office in Suite 504-5 Medical Arts Building, Chattanooga. Practice limited to Obstetrics and Gynecology.

Dr. J. L. Jelks, of Memphis, addressed a recent meeting of the Medical Square, a college organization of Master Masons. Dr. Jelk's subject was "Leading Medical Men Who Are Members of the Masonic Fraternity."

In this day of surveys, research and investigations, we are not surprised to read two columns on the subject of Doctors' Magazines. A Knoxville reporter (unemployed) spent three hours and twenty-three cents investigating sixteen doctors' offices. All he found was that the oldest magazine in the offices visited was dated March, 1930.

We don't know why the investigation bug bit the reporter where it did, but probably the paper had to be filled up and the expensive and extensive research was undertaken. From the standpoint of value to the public the findings are quite in line with the results of other investigations.

TENNESSEE HOSPITAL ASSOCIATION

We have received a letter from Dr. Eugene B. Elder, President of the Tennessee Hospital Association. We take the liberty of printing a portion of the letter as we know the information will be of interest to our doctors:

"Since organization of the Tennessee Hospital Association two years ago, we have endeavored to meet the day previous to the State Medical Association, and it is our wish to again do so this year. If I am correct, the Tennessee State Medical Association will meet April 12, 13, 14, and in that event we will meet on April 11th.

"Further wish to say that the Tennessee Hospital Association will be glad to be of any service at any time to the Tennessee State Medical Association."

The Committee on Arrangements and Program is composed of:

Dr. B. P. Moffatt, Secretary, Memphis Hospital Association, Memphis.

Dr. Henry Heddan, Supt., Methodist Hospital, Memphis.

Dr. George Sheets, Supt., Baptist Hospital, Memphis.

Dr. R. G. Ramsey, Supt., Gartley-Ramsey Hospital, Memphis.

Mr. C. P. Connell, Supt., Vanderbilt Hospital, Nashville, is Secretary-Treasurer of the Association and ex-officio member of all committees.

The Committee on Constitution and By-Laws is:

Dr. Henry Heddan, Supt., Methodist Hospital, Memphis.

Mr. J. H. Mauney, Supt., Fort-Sanders Hospital, Knoxville.

Miss Olivia Shortt, Supt., Clarksville Hospital, Clarksville.

Legislative Committee composed of:

Mr. C. P. Connell, Supt., Vanderbilt Hospital, Nashville.

Mr. W. Dortch Wood, Supt., Nashville General Hospital, Nashville.

Dr. W. W. Core, Supt., Davidson County Hospital, Nashville.

Publication Committee:

Mr. C. P. Connell, Supt., Vanderbilt Hospital, Nashville.

Dr. J. B. Naive, Supt., Beverly Hills Sanatorium, Knoxville.

Dr. S. T. Rucker, Supt., Lynnhurst Sanatorium, Memphis.

We have received copies of letters from two county secretaries sent to every member of their county societies. We want to pass on this advice to every member of the Association.

"Dear Doctor: The members of this society have elected new officers for the coming year. These officers are asking you to do your part helping to make 1932 a successful year for the Maury County Medical Society. You can help by regular attendance. The influence of associations with fellow doctors under a common ideal will inspire them to practice a higher ethical standard. In addition to professional benefits we will develop a social fellowship which should be the fundamental principle of our society.

"A doctor should attend the meetings regularly for the same reason that a child attends school regularly. You cannot be a well informed scholar unless you attend regularly. There may be some criticism of a certain program, or a certain activity, or a certain officer, or some other minor dissatisfaction, but those are incidentals to the real purpose of the society meetings, and these little differences may be only, after all, the reflection of our own state of mind. Regular attendance is the chief means to a great end. So let's all be there on time.

"CHAS. D. WALTON, *Sec'y-Treas.*,
"Maury County Medical Society."

* * *

"Dear Doctor: We know that you are interested in your profession, that you want to inform yourself concerning the recent advances in your chosen field, hence this letter.

"What better way is there to keep up with new things than a subscription to your State Journal and attendance at the regular monthly meetings of your medical society? I say 'your society', though it may be that you have not yet paid your annual dues. It is still your society and every eligible doctor in Gibson County should be an active member and help to support the society. Every doctor in Gibson County is enjoying benefits which have come to the profession solely through the efforts of organized medicine and every doctor should further these efforts by enrolling as a member.

"Every month we have speakers from Memphis, or Nashville, or neighboring centers to speak to us. The program is arranged a year in advance and covers pediatrics, obstetrics, internal medicine, surgical diagnosis, eye, ear, nose and throat conditions, and every subject is treated from the viewpoint of the general practitioner. It is hardly fair that less than one-half the doctors in Gibson County should carry all of the burden. If you are not already a member, join today. The dues are $4.50 a year and if you desire medical defense the amount is $6.50. This fee makes you a member, not only of the County Society, but also the State Association and carries with it the subscription to the State Journal. Think what you get for your $4.50—twelve issues of the State Journal, full of news of interest to medical men from all over the state, scientific articles and abstracts of recent literature. Your society presents at least 24 scientific papers and in addition to all of these things you have the satisfaction of knowing that you are a member of a great medical association, that you are helping to carry on.

"If you have paid your dues, well and good—if not, bad and worse. Send me your check and you will receive your membership card from the State Association in Nashville. Do it now—dues were delinquent January 1st.

F. L. ROBERTS, M.D., *Secretary*,
"Gibson County Medical Society."

OFFICERS OF COUNTY SOCIETIES FOR 1932

Bradley County:

W. B. Campbell, Cleveland, President.
R. O. Kibler, Cleveland, Vice-President.
S. J. Sullivan, Cleveland, Secretary-Treasurer.

Carroll County:

E. W. Hillsman, Trezevant, President.
L. E. Trevathan, Bruceton, Secretary-Treasurer.

Gibson County:

T. W. Jones, Bradford, President.
George E. Spangler, Humboldt, Vice-President.
F. L. Roberts, Trenton, Secretary-Treasurer.

Giles County:

F. B. Hulme, Pulaski, President.
G. C. Grimes, Aspen Hill, Vice-President.
T. F. Booth, Pulaski, Secretary-Treasurer.

Henry County:

R. Graham Fish, Paris, President.
J. H. McSwain, Paris, Vice-President.
A. A. Oliver, Paris, Secretary-Treasurer.

McMinn County:

W. S. Moore, Etowah, President.
D. P. Brendle, Englewood, Vice-President.
R. W. Epperson, Athens, Secretary-Treasurer.

McNairy County:

J. R. Smith, Selmer, President.
J. J. Abernathy (deceased), Vice-President.
H. C. Sanders, Selmer, Secretary-Treasurer.

Sumner County:

John R. Parker, Gallatin, President.
Homer Reese, Gallatin, Vice-President.
Wm. N. Lackey, Gallatin, Secretary-Treasurer.

MEDICAL SOCIETIES

Anderson County—The Anderson County Medical Society met Jan. 4, with a good attendance. This year has shown an increase in interest in the Society and the papers read so far have been above the average, according to a report from the secretary.

Dr. W. B. Barton read a paper on "Uremia." Dr. H. D. Hicks presented a paper on "Infant Feeding and Nutritional Work in Children of Grammar School Age."

Blount County—Every physician in Blount County with his wife attended the annual banquet at the High School cafeteria. The annual presidential address was delivered by Dr. E. H. Lowe. Dr. R. T. Thomas was installed as the presiding officer for 1932.

For a small society of only twenty-six members we think that the work of our Society compares very favorably with any Society in the state, and the members are very enthusiastic in their support of its work from year to year.

Your attention is called to the fact that ours is the only small town society in the state which holds weekly meetings, and further that this record has been kept up for a number of years.

ANNUAL REPORT BLOUNT COUNTY MEDICAL SOCIETY FOR 1931

	M'tgs Att'd.	Case R'p'ts.	Papers Read.	Papers Disc'd.	Clinics Prsntd.
Brickel, W. O.	2	0	2	0	0
Bryant, K. A.	48	0	3	10	0
Burchfield, G. W.	39	14	3	6	0
Calloway, H. A.	30	0	1	6	0
Carson, J. E.	44	10	2	12	0
Crowder, C. F.	37	4	3	1	0
DeLozier, B. E.	44	5	2	6	0
Ellis, E. L.	27	3	2	9	0
Gamble, A. M.	11	4	0	0	1
Griffin, E. W.	36	12	1	7	3
Hall, J. E.	7	0	0	0	0
Hyder, R. L.	45	9	0	8	0
Hannah, G. F.	0	0	0	0	0
Jones, A. L.	2	1	2	0	0
Kittrell, S. S.	20	3	1	0	0
LeQuire, G. D.	47	12	2	18	1
Lovingood, W. B.	44	3	2	3	1
Lowe, E. H.	45	3	2	0	2
McMahan, J. W.	0	0	0	0	0
McCulloch, J. A.	47	4	2	10	0
Olin, L. C.	33	3	2	5	1
Thomas, D. R.	41	12	2	11	0
Tipton, J. S.	1	0	0	0	0
Vinsant, C. C.	50	10	2	9	1
Waters, J. M.	31	1	0	10	1
Zoller, F. A.	45	4	1	6	0
	776	127	38	137	11

Total numbers of meetings held during the year 1931	52
Special meetings	1
Special addresses by visiting doctors	11
Visitors during the year 1931	63
Average attendance at the 1931 meetings	15

The members of the Blount County Medical Society are to be congratulated on their continued interest in the work of the Society, and on the increased attendance in the meetings.

They are also to be congratulated on their interest in the meetings of other medical organizations as is evidenced by the fact that they have had large delegations at the meetings of the Tennessee State Medical Association and the East Tennessee Medical Association during the past year.

The Blount County Medical Society meets regularly every Thursday night at 8 o'clock in Room 311, First National Bank Building.

The members are urged to attend the meetings, and visitors are always welcome.

J. A. McCULLOCH, M.D., Secretary.

Carroll County—The Carroll County Medical Society reorganized at McKenzie on January 11th. After the business session the regular Tri-County meeting was called. Dr. T. D. Moore, of Memphis, read a paper.

Chester, Henderson and Decatur Counties—The Chester, Henderson and Decatur County meeting was held at Henderson on January 14th. After a luncheon Dr. Herron, of Jackson, read a paper on "Inflammation of Nose and Throat." It was followed by a round table discussion. The next meeting will be held on March 10th at Lexington.

Hamilton County—The 1932 program has been released. The following numbers have been given or will appear in the near future:

Jan. 14th: "Syphilis", by Dr. G. Victor Williams.

Jan. 21st: "Arthritis", by Dr. L. T. Stem.

Jan. 28th: "Laryngeal Diphtheria", by Dr. Chester L. Lassiter.

Feb. 4th: "The Value of Radiographic Methods in Cardiology", by Dr. C. E. Homan and Dr. F. B. Bogart.

Feb. 11th: "Newer Consideration in the Treatment of Diabetes Mellitus", by Dr. Harold Bowcock, Atlanta.

Feb. 18th: "The Diagnosis and Treatment of Chronic Sinus Diseases", by Dr. Stewart Lawwill, and "Sinus Bronchus Disease", by Dr. J. D. L. McPheeters.

Davidson County—Jan. 12: "A Resume of Public Health and Charity Health Work in Davidson County in 1931", by Dr. Stanley R. Teachout. Discussion opened by Dr. John M. Lee.

Jan. 19: "Lead Poisoning in Infants and Children", by Dr. Frazier Binns. Discussion opened by Dr. Milton Smith Lewis.

Jan. 26: "Moving Pictures of Forceps Delivery", by Dr. J. B. DeLee, Chicago Lying-In Hospital. Presented by Dr. Sam Cowan, Nashville, and Dr. W. B. McGee, Resident Staff Chicago Lying-In Hospital.

Feb. 2: Dr. Samuel Riven, "Hypothyroidism Without Myxedema".

Feb. 9th: Dr. C. R. Crutchfield, "Spinal Anesthesia With Case Reports". Discussion opened by Dr. L. W. Edwards.

Feb. 16th: Guests of Phi Beta Pi Medical Fraternity at Neely Auditorium to hear address by Dr. Thomas S. Cullen, of Baltimore.

Gibson County—Dr. W. B. White, of Jackson, discussed "Diseases of the Gall Bladder" at the December meeting of the Gibson County Society. Officers were elected. Programs for future meetings were planned. We are told Gibson County has received a grant which will enable it to bring to Trenton some of the nationally known doctors for addresses before the society.

The January meeting was addressed by Dr. Casa Collier, of Memphis. The lecture was illustrated by colored slides made during Dr. Collier's visit to Africa.

Dr. Wm. C. Chaney, of Memphis, read a paper on "Pneumonia."

Giles County—The Giles County Medical Society met in regular session on Jan. 28th, with fourteen members present.

Dr. Richard A. Barr, Nashville, read a paper on "Five Hundred Consecutive Operative Appendix Cases."

Dr. J. C. Pennington, Nashville, read a paper on "A New Vesical Neck Resector."

Hardin, Lawrence, Lewis, Perry and Wayne Counties—On January 26th, the following was the program:

Dr. Sam T. Ross, Nashville, "Surgical Treatment of Cirrhosis of the Liver With Ascites". Discussion opened by Dr. G. N. Springer, Hohenwald.

Dr. E. A. Sayers, Nashville, "The Diagnosis and Treatment of Fractures of the Skull". Discussion opened by Dr. W. K. Edwards, Centreville.

Presidential address, Dr. O. H. Williams, Savannah.

Dr. J. H. Tilley, Lawrenceburg, "Treatment of Varicose Veins". Discussion opened by Dr. T. J. Stockard, Lawrenceburg.

Henry County—On January 13th, Dr. Wm. Britt Burns, of Memphis, read a paper on "Surgery of the Stomach". Dr. Sam S. Briggs, of Nashville, opened the discussion.

Knox County—Program as follows:

Jan. 12th: Dr. H. K. Cunningham, "Colds". Dr. Carmichael opened the discussion.

Jan. 19th: Dr. E. R. Zemp was the essayist.

Jan. 26th: Dr. Robert Leach.

Feb. 2nd: Dr. Oliver Hill, "Dehydration".

McMinn County—Dr. R. W. Epperson read a paper on "Stomach and Intestinal Conditions Complicating Diseases of the Upper Air Passages in Children." It was voted that the president appoint each month a symposium leader to select a subject of general professional interest to be discussed by all members of the society.

McNairy County—At the December meeting officers were elected and plans made for the work of 1932. The society will meet each third Thursday.

Montgomery County—Sixteen members and two guests were present at the January meeting. Dr. M. L. Shelby read a paper on "Myelogenous Leukemia." Dr. John W. Ross read a paper on "Splenectomy". Dr. Bryce Runyon spoke on "Radiation", and Dr. R. B. Macon on "Other Anemias". After the meeting a buffet luncheon was served by Miss Olivia Short, superintendent of the hospital.

Obion County—The Obion County Society met at Union City on January 28th, Dr. R. G. Latimer spoke on "Fractures of the Jaw". Dr. W. B. Harrison discussed "Mortality Rates in Tennessee." Discussions and refreshments followed the program.

Roane County—The Roane County Medical Society had a big get-together meeting on January 19th. Every physician in the county was invited. Luncheon and a social hour were enjoyed. Two papers were presented. Dr. T. H. Phillips, of Rockwood, spoke on "Cervical Infections", and Dr. Roberts, of Kingston, had for his subject, "An Inventory and the Outlook". Both papers were fully discussed. Case reports were made. The next meeting will be held on the third Tuesday in February.

Williamson County—On January 12 every member, except one, was present at the meeting. Dr. W. D. Hickerson read a paper on "The Tuberculosis Situation in Tennessee."

Dr. Dan German will read a paper on "Pneumonia" at the February meeting.

OTHER MEDICAL SOCIETIES

THE MEDICAL ASSOCIATION OF GEORGIA

The next annual session of this society will be held in Savannah, Georgia, May 17, 18, 19, 1932.

VANDERBILT UNIVERSITY MEDICAL SOCIETY

1. *Case Report.* Unusual Case of Optic Neuritis. Dr. Van C. Temple.

J. D., white, male, age 12. Seven days before admission developed an acute illness with high fever, slight headache and loss of appetite. Vision in right eye became impaired on fourth day of illness, progressing to almost total blindness by seventh day. Between the third and the sixth days he received a total of 36 grains of quinine sulphate. On admission there was rather violent bilateral neuro-retinitis, much worse on the right. General condition good. Cause of illness not determined. Eleven weeks later, vision of right eye had returned to almost normal and general health was good.

Case discussed by Drs. Casparis and Brooks.

2. Recovery of Treponema Pallida from a Gastric Ulcer. Drs. Seale Harris, Jr., and Hugh J. Morgan.

There has been considerable controversy over the actual existence of syphilis of the stomach. The condition has been hypothecated clinically but unquestioned pathological proof has been lacking. In this work, treponema pallida were recovered from a gastric ulcer of a patient with clinical evidence of syphilis of the stomach. The method of recovery was by inoculation of an emulsion of a portion of the gastric ulcer into a rabbit. The rabbit developed typical syphilitic orchitis from which the treponema pallida were demonstrated by means of darkfield examination, Levaditi stain of the testicular lesion and re-inoculation of other rabbits.

Paper discussed by Drs. Brooks, Burwell, Youmans and Morgan.

3. A Note on the Relationship of Chemical Structure to Anthelmintic Action. Dr. Paul D. Lamson.

An illustration was given of our ability when once knowing the chemical constitution of a drug, to make related substances with beautiful gradations of pharmacological properties, 4-n-hexyl-m-cresol used as an example, it having approximately the same action on ascaris in vitro as hexylresorcinol, but showing much less irritant action on mucous membrane.

Paper discussed by Miss Ward.

4. Some Factors Affecting Spinal Reflexes. Drs. C. E. King, Ray Bryan and W. E. Garrey.

The effects of acidosis, alkalosis and anoxia on the knee jerk and ankle flexion were studied. The following conclusions were reached: (1) The diminution in the knee jerk and ankle flexion following the administration of carbon dioxide takes place at a much lower tension of the gas in dogs with intact cords than in those with sectioned cords. This diminution of reflexes in the intact animal is due to an inhibition associated with an excitation of centers higher up in the neuraxis. (2) The direct effect of carbon dioxide on the spinal centers is, first an excitation, then depression. (3) The spinal centers are more sharply affected by anoxia than by carbon dioxide. (4) A state of alkalosis is associated with an augmentation of spinal reflexes. (5) The effects of acid-base changes on the spinal reflexes, within normal limits, are overshadowed by other factors of reinforcement and inhibition.

Paper discussed by Drs. Sam Clark and Garrey.

ABSTRACTS OF CURRENT LITERATURE

ANESTHESIA

By Hugh Barr, M.D.
Medical Arts Bldg., Nashville

Spinal Anesthesia. Subarachnoid Radicular Conduction Block. Paul D. Scofield, M.D., Litt.B., Columbus. The Ohio State Medical Journal, August, 1931.

Spinal anesthesia is dependent upon the direct application of an anesthetic solution to the sensory spinal nerves. The anesthetic becomes fixed within a very short time, hence the specific gravity of the fluid has no bearing upon the height of anesthesia, and tilting the table will not raise or lower the anesthesia level. The height of anesthesia is dependent upon the amount of diffusion and the diffusion upon the amount of fluid withdrawn. Therefore, if a high anesthetic is desired a larger amount of cerebrospinal fluid is withdrawn.

Roughly speaking 2 c.c. of spinal mixed with novocaine is sufficient for anesthesia of the lower extremities or the perineum, while for chest surgery 8 c.c. is used. This is in accordance with the physical law that diffusion of liquids under pressure is inversely proportional to the pressure, consequently, when the cerebrospinal fluid is lessened by withdrawing a large amount of fluid, the upward diffusion of reinjected fluid is greater. There is no difference in height of anesthesia in rate of injection.

The fall in blood pressure is due to the flooding of the splanchnic area at the expense of the periphery due to blockage of some of the vaso-constrictor nerves. When the fall is great the brain is robbed of its blood supply, giving rise to the impression that the resulting phenomena are a result of respiratory depression, when, as a matter of fact, the symptoms are due to a bulbar and cerebral anemia.

The author does not regard fall in blood pressure as serious as the Trendelenberg position remedies this condition, preventing cerebral anemia. Believes ephedrine as unnecessary.

Nausea, pallor and sweating is relieved by inhalation of oxygen. Contra-indications to spinal anesthesia are cerebellar neoplasms and suppuration near point of injection. Spinal anesthesia is especially desired in cases complicated by pulmonary, cardiac, hepatic or renal diseases.

CLINICAL PATHOLOGY

By R. H. Monger, M.D.
Medical Building, Knoxville

Effects of Sodium Ricinoleate on Gonococcus. Journal of Bacteriology. C. P. Miller, Jr., and Ruth Castles.

Experiments are described in which sodium ricinoleate inhibited the growth of gonococci on artificial mediums in very high dilutions. Gonococci suspended in 0.1 and 1 per cent solutions of sodium ricinoleate were in large part dissolved. Such suspensions killed mice in smaller doses than suspensions of untreated gonococci. The same result was obtained with gonococci treated for as long as seventy-two hours with sodium ricinoleate. Ricinoleated gonococci inoculated into rabbits engendered specific agglutinating and complement-fixing antibodies in as high titers as did untreated gonococci. The difference between the effect of sodium ricinoleate on the killing power of the gonococcus and on that of the streptococcus and pneumococcus probably depends on on the differences in the mechanism of pathogenicity.

On the bases of these observations the authors conclude that sodium ricinoleate does not "detoxify" gonococci but rather increases their lethal action for mice. It does not destroy the antigenic properties of gonococci.

Infections of Rabbits With Tubercle Bacilli by Way of Trachea. Studies on Defensive and Metabolic Apparatus of Lungs. Archives of Pathology, Nov., 1931. B. M. Fried.

The author reports that infection of rabbits with the bovine type of tubercle bacilli by way of the trachea causes an instantaneous reaction in the lungs. The early lesions are found in the lung within five minutes after the aerogenous infection. The lesion is intraalveolar, being a parenchymatous alveolitis. The cells that primarily respond to the acid fast bacilli are those commonly known as respiratory epithelium. After tubercle bacilli gain entrance, these cells undergo morphologic changes, proliferate, separate from the wall of the air sacs, phagacytose the acid fast bacillus and form typical miliary tubercles. They also form giant cells of the Langhans type. Rabbits infected with bovine tubercle bacilli by way of the trachea survive from three to four times longer than those infected with the same amount of bacilli by way of the blood stream. In many of the aerogenously infected animals the acid-fast bacilli remain apparently "immuned for life" in the lungs, for no lesions or bacilli are detected in organs outside the pulmonary tissues.

DERMATOLOGY

By E. E. Brown, M.D.
Doctors Building, Nashville

Chemical and Electrolytic Lesions of the Mouth Caused by Artificial Dentures. By Everett S. Lain, M.D., Oklahoma City, Okla. Archives of Dermatology and Syphilology, January, 1932.

Routine examinations were made on the mouths of forty-five consecutive cases. In addition to discussing chronic ulcerations resulting from irregular teeth and improperly fitted artificial dentures, he goes somewhat into detail about lesions produced by poisonous chemicals contained in the artificial dentures, and also of injuries arising from electro-chemical action between dentures made of different metallic elements, as between gold and silver or gold and amalgam, etc.

For the electrical tests a very sensitive micro-ammeter was used and control studies were made outside of the mouth of the same metals suspended in various buffer solutions.

In several cases after all ordinary factors had been eliminated it was concluded that the poisonous constituents of the dental plates were the offending agents.

Each of the thirty consecutive adults examined whose mouths contained two or more metals of different potentialities registered from one to forty degrees of galvanic current on the micro-ammeter.

Those cases checked up who had had amalgam filling removed and replaced with gold seem to have been completely relieved.

OPTHALMOLOGY

By Robert J. Warner, M.D.
Doctors Building, Nashville

Wintergreen Oil as a Remedy in Ulcers of the Cornea. Koldovsky-Kvetoslav, American Journal of Ophthalmology, January, 1932.

The author used wintergreen oil according to Sabatzky's method (Klin m. f. Augenh., v. 83) in two cases of ulcus rotundu, four cases of ulcus serpens, seventeen cases of infected foci from foreign bodies, two cases of herpes, and eight catarrhal ulcers. In no case did the defect heal with transparent cornea and without the appearance of an opacity. The author infected each eye of five rabbits with pus from these patients, treated one eye by Sabatzky's method and the other with optochin or cautery, and found Sabatzky's method unsatisfactory—the ulcers spreading beyond control. He says that there is no justification for employing oil of wintergreen in treatment, and especially not in ulcus serpens, as the pain is intense and better results may be obtained by other methods.

(Sabatzky's method: After using atropin and cocaine, the ulcer is freed of all debris with a foreign body spud, touched with optochin, and then oil of wintergreen is massaged into it. Sabatzky says that the cornea regenerates and no scar is visible.)

OTOLOGY, LARYNGOLOGY, RHINOLOGY

By W. G. Kennon, M.D.
Doctors' Building, Nashville

The Relation of the Nasal Sinuses to Asthma, by Harold G. Tobey, M.D., Boston, Mass. Archives of Otolaryngology, Vol. 14, No. 6. December, 1931.

Asthma has been variously defined as due to a neurosis, a vaso motor neurosis and a hypersensitiveness to foreign protein. After covering various theories and definitions showing the present ideas and theories as to the cause of asthma and the influence, if any, of nasal disease on its manifestations, the author submits the following conclusions:

1. The cause of asthma is unknown.

2. Toxaemia seems to be the underlying etiological factor.

3. There are two theories as to the toxaemia. The first of interest to rhinologist is that of a general non-specific toxemia from any cause which on reaching a certain stage of intensity causes a bronchospasm, but only when released by a stimulus from the ethmoidal region of the nose, which in itself must have reached a certain stage of intensity. The second is the theory of a specific toxemia, in a previously sensitized subject, released by exposure to a specific foreign protein. A hereditary predisposition, a previous sensitization and a certain degree of intensity are also necessary to this theory.

4. Reflex asthma is recognized in a small group of cases. It is shown that the nasal reflex, particularly from the region of the ethmoids, is not the only reflex path by which bronchospasm can be initiated.

5. No definite type of nasal disease can be assigned as a "trigger mechanism" to set off an attack of asthma.

6. The close analogy between hay fever (nasal asthma) and asthma as well as the great advance in the successful treatment of the former, made possible by the allergic concept should make an especial appeal to the rhinologist in his conception of asthma.

Control of Pain Following Tonsillectomy. By Alexander F. Laszlo, New York. The Laryngoscope, Vol. 13, No. 1, January, 1932.

Tonsillectomy may be painlessly performed by the experienced surgeon by means of anaesthetics and skillful technique. The problem of rendering convalescence agreeable is, nevertheless, one of considerable difficulty.

The younger patients usually suffer less. Skillful and gentle operative technique will lessen the postoperative pain. The use of quinine and urea as advocated by Trotter, and others, has not been generally adopted because of its slowness and uncertainty of action and the occasional occurrence of postoperative sloughing.

Nupercain (Ciba) is alleged to possess lasting anaesthetic effect. In many cases, however, the anaesthesia only lasts for a short period.

It is difficult to evaluate the effectiveness of a drug of which the benefit is entirely appraised by the patient.

Recently a drug distributed under the name of "Euphagin Tablets", originated by Dr. Haslinger, of Vienna, has been used for the relief of postoperative pain.

These tablets contain amidobenzo acidethylester, some menthol and sodium borate. They are non-toxic. About eight or ten minutes are required to dissolve the tablet in the mouth. The saliva becomes impregnated with the drug and should be allowed to trickle into the fossa. The anaesthesia is present within a minute after the tablet is placed on the tongue and persists for about an hour. The surface sensibility is considerably lessened, but the anaesthesia does not penetrate sufficiently to affect materially the muscular reflexes.

Euphagin combined with aspirin chewing gum has been used routinely in postoperative cases. No opiates are prescribed, not even codein. Euphagin has also been employed in a few cases of other painful mouth and throat afflictions, such as stomatitis carcinoma and ulcerations.

No untoward effects have been observed from the use of this preparation, which may be used uninterruptedly during the first few postoperative days.

ORTHOPEDIC SURGERY

By Robert F. Patterson, M.D.
Medical Arts Building, Knoxville

Surgical Approach in Old Posterior Dislocation of the Elbow. By George W. Vangarder. Journal of Bone and Joint Surgery.

It seems that this condition is very common in China where the author's cases were treated. The treatment instituted by native doctors, or more usually Barbers, is worse than useless. Reduction of the dislocation by closed methods should be reserved for cases of less than three weeks' standing. Open operation should be the treatment for cases of longer duration. This article included a report of six cases. The technique of the operation is as follows:

A straight posterior median incision is used running from the tip of the olecrenon proximally for five inches. The lower end of the triceps is exposed and the skin is widely retracted. The ulnar never is exposed and retracted. Then a transverse incision is made one-half inch above the tip of the olecrenon. This opens into the space filled with fibrous tissue and often callous. This is carefully cleared without damage to bone or the articular surfaces. The forearm is now greatly flexed bringing into view any adhesions present. These are severed together with other resistant structures and the arm is brought gradually into complete flexion. The dislocation is then carefully reduced taking care not to fracture the coronoid process. After reduction a portion of the tendo achilles or a long strip of fascia lata is used to unite the separated portions of the triceps tendon by passing it through the different sections and uniting it to itself with the arm held in right angle flexion. The limb is splinted for ten days, then a sling is applied with the arm in acute flexion. At the end of two weeks physiotherapy is gently begun and continued as long as necessary.

PEDIATRICS

By John M. Lee, M.D.
Doctors Building, Nashville

The Problems of Pyelitis. Henry Helmholtz, M.D. Abstract in Amer. Jour. Diseases of Children, page 1488, December, 1931.

There are three phases of the problem of pyelitis: (1) The histopathology, (2) the diagnosis, and (3) the treatment. All children who die of pyelitis have parenchymal infection. It is possible for a colon bacillus infection to be present simultaneously with a parenchymal infection. The colon bacillus is rarely found in children's blood, but bacilluria may occur by extension, as it is more frequent in girls than boys. In early life, it occurs with equal frequency in boys and girls.

When there is no obstruction to the outflow, abscesses rarely form. When obstruction exists, abscesses may be formed in eighteen hours. The glomerular epithelium can take care of the infection. Encapsulated lesions are usually of hematogenous origin.

The rapidity with which lesions in the kidneys heal is not appreciated. The lesions may heal in twenty-four hours, and no evidence of infection may be found for from ten to twelve days.

Diagnosis should not be made without a catheterized specimen. Formerly cultures were made, but the economics of practice made this prohibitive. The organisms may be seen under a high power lens without the oil immersion lens. A large number of organisms is presumptive evidence of an infection of the kidney. In eighty-seven normal patients six specimens were found to contain bacteria. In voided specimens, vaginal infection may result in bacteria being found; hence the necessity for a catheterized specimen.

The uses of alkalis and the changes from and to alkali are not effective in controlling B. coli in cultures. On acidification with ph. 3.5, the organisms were killed in twenty-four hours. Ammonium chloride was the drug used. The resulting acidity is the important factor, and not the amount of methenamine.

Phenyl salicylate and caprakol were found useless in inhibiting bacterial growth.

The presence or absence of bacteria indicates whether or not the condition is cured. Anomalies are present in 3 per cent of new-born infants. They do not predispose to infection, but make it difficult to obtain a cure. The author showed many slides to indicate the necessity of obtaining a definite acidity of the urine, which results in destroying the bacteria. Results with methenamine with ammonium chloride should be obtained in days, not months.

The dosage of ammonium chloride is usually 60 grains in twenty-four hours for a child of 5 to 6 years of age. This is best given in enteric coated tablets, four doses a day.

SURGERY — GENERAL AND ABDOMINAL

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The Association of the Liver in Disease of the Biliary Tract. E. Starr Judd, M.D., F.A.C.S., Allen C. Nickel, M.D., and William L. A. Wellbrock, M.D., Rochester, Minnesota. Vol. liv, Jan., 1932, No. 1, pg. 13-16, Surgery, Gynecology and Obstetrics.

It is certain that this condition of hepatitis or cholangitis occurs routinely in the presence of cholecystitis. It is also true that this condition of the liver exists when recognizable change cannot be made out in the gall bladder or bile ducts. Probably, under these conditions, hepatitis is secondary to infection in some part of the portal system. It is a well known fact that the liver has a marked detoxifying function and that these changes in the hepatic tissue at times may represent the reaction that has taken place as a result of neutralizing either bacterial or chemical toxins that have been brought to the liver by the portal circulation.

We feel sure that hepatitis may occur as a primary condition and that the symptoms which result from it are similar to those of cholecystitis. Furthermore, removal of the gall bladder in these cases of primary hepatitis will relieve the symptoms.

In the group of cases studied, it was clearly shown that bacteria can be found in a certain proportion of these cases. It was difficult, however, to establish the importance of these bacteria from the standpoint of the hepatic change. The virulence of the organisms which were recovered from the liver was not great. Further studies along these lines may possibly tell more concerning the importance of these bacteria.

The Common Bile Duct. Surgery, Gynecology and Obstetrics, John B. Deaver, M.D., and V. G. Burden, M.D., Philadelphia. Vol. liii, November, 1931, No. 5, pg. 662-666.

The surgical treatment of disease of the biliary tract, in the past and present, has been concerned chiefly with affections of the gall bladder. In this period of 50 years, there has been ample time and experience to evaluate results. It has been the privilege of the senior author to be an active participant throughout this half century of surgical progress. In retrospect, on contemplation of the good and evil in this special field of surgery, there stands out with the prominence of indelible memory the role of the common duct. It requires much bitter and trying experience adequately to appreciate the importance of the common duct in the satisfactory and unsatisfactory results of surgery of the biliary tract. Unlike the gall bladder the common bile duct is indispensable, yet it is so readily affected by disease and operative trauma, the consequences of which are often disastrous, that its surgical importance scarcely can be overestimated.

Anatomically, the common bile duct lies in the right free border of the gastrohepatic omentum, then behind the duodenum, between the duedenum and the pancreas or in a groove in the head of the pancreas whence it enters the wall of the duodenum through which it passes obliquely to its terminal opening, the papilla of Vater, surrounded by the sphincter of Oddi. The first or supraduodenal portion is not always present for the reason that in some instances the hepatic duct is prolonged down to the outer border of the duodenum before it is joined by the cystic duct. The supraduodenal portion of the duct in the gastrohepatic omentum is accompanied by the hepatic artery and portal vein and by several lymphatic glands external to the omentum. The intimate relationship between the duct and nearby structures, the gall bladder, the pylorus, the duodenum, and the pancreas, makes it subject to mechanical and infectious derangements consequent upon disease of these organs.

From its gross appearance, the common duct appears to be a passive channel for the transit of bile. In view of the surgical importance of the duct, a detailed description of its finer anatomy should be of value. But such cannot be found in modern textbooks of anatomy. The older anatomists described glands in the walls of the extrahepatic bile ducts. The presence of muscular tissue has been disputed. Burden carried out microscopic studies on the extrahepatic ducts of the human subject and gave a description of the surgical histopathology. When the common duct is laid open the internal surface presents a characteristic appearance and at first seems to be reticulated, but on closer inspection under the dissecting microscope, it is seen to be covered by minute pits or shallow depressions, some of which contain plugs of mucus. Cross sections of the duct show lining layer of tall columnar epithelium not unlike that which covers the rugae of the gall bladder. Beneath the lining layer is a thick compact layer of connective tissue which contains considerable elastic tissue. The outer layer of the duct wall is composed of loose areolar tissue in which are found blood vessels, lymphatics, and muscle. The muscular layer is composed of good sized, isolated, oval bundles of unstriped fibers, some of which are arranged in a longitudinal and others in a circular direction. The pits which appear on the internal surface of the duct are mere shallow epithelium lined depressions between folds of mucous membrane. Adjacent to the lumen of the duct and opening into it are ampulla-like cavities lined with epithelium. Into these cavities drain the ducts of mucous glands which are found richly distributed throughout the wall of the common duct. The glands in the wall of the duct are of particular interest since it was found that in patients who had cholecystitis the glands constantly showed inflammatory changes characterized by surrounding round cell infiltration and cystic changes. The surgical significance of these findings in the wall of the common duct is important in their bearing on the sequelae of biliary tract infection. An infection so situated is difficult to eradicate and the consequences may seriously jeopardize the integrity of the main bile channel. Thus it appears that choledochitis does not merely express or signify a catarrhal condition of the lining of the bile duct.

Some of the gross lesions affecting the common duct are stone, stricture, ulceration, and neoplastic growths. It may also be involved by infection and adhesions extending from adjacent structures as gall bladder, duodenum, pancreas, and regional lymph glands.

The location of the duct and its topographical relations make the part it plays in biliary tract infection highly important. The third part, the pancreatic, and the fourth, the interstitial, are its most important portions. The terminal portion is dilated, forming the ampulla of Vater surrounded by the sphincter of Oddi, making it the more important of the two latter portions. This has been shown more particularly in the last few years, during which time more operations have been done for biliary tract infection, thus offering greater opportunity for the better interpretation of the pathological findings: and also since biliary tract drainage by duodenal tubage has occupied a prominent place in the medical treatment of biliary tract infection. We refer particularly to the influence which the sphincter of Oddi has upon the drainage of the common duct and the filling of the gall bladder, and the part it plays in the pathology of the duct.

Other pathological conditions found in the common duct are inflammation (choledochitis), stricture, ulceration, and perforative ulceration, stone, distention with muddy, sandy bile, neoplastic growth and diverticulum, which if large, results in cystic dilatation of the duct. The traumatic conditions include section, tear, or removal of a portion of the wall and ligature, all of which, if not recognized at the time of occurrence and repaired, result in a bile fistula or permanent jaundice. Any one of these conditions may result in failure of the original operation to give relief. Further, they leave the patient worse off than before the operation. Although the traumatic conditions may occur in the hands of the most expert surgeon, nevertheless they are an insult to surgery and decidedly detract from the sum total of beneficial results.

Let us next analyze the pathologic and traumatic conditions. Inflammation of the common duct in the majority of instances is a result of cholecystitis. The second most common cause, is stone in the common duct, since in almost every such instance there has been an antecedent cholecystitis. The presence of the stone in the duct, because it is a foreign body and because it causes a varying degree of biliary abstruction, acts to intensify the local inflammatory reaction and even may rise to ulceration.

Inflammation of the duct is recognized through sight and touch by the presence of dilatation opacity and thickening of the walls. The normal duct is about 6 or 7 millimeters in diameter and has a blue color similar to that of the gall bladder. Ordinarily, it cannot be palpated as a separate structure in the gastrophepatic omentum because of its thin collapsible walls. Palpatory examination of the duct is carried out by inserting the tip of the index finger into the foreman of Winslow and gently compressing the overlying structures between the finger and the thumb. When foramen of Winslow is occluded by adhesions this method of palpation cannot be done satisfactorily unless one is able to define by touch the border of the gastrohepatic omentum. The latter may be thick and indurated and have overlying enlarged lymphatic glands. When in doubt, the duct may be directly inspected by incising the gastrohepatic omentum along its right free border. When the history is suggestive of stone in the common duct it has been our experience that negative palpatory findings are not reliable and we do not feel satisfied until the duct has been opened and its interior examined by touch if possible and by the probe.

Stricture of the common duct is always followed by jaundice which may be intermittent or permanent. In many cases the symptoms cannot be distinguished from those of common duct stone. Where the type of jaundice is intermittent, the explanation is probably that the stricture has narrowed but not completely occluded the lumen and at certain times by reason of the character of the bile or local inflammatory oedema the pathway becomes obstructed. Occasionally, there is a stone above the stricture. A stricture of this type may exist for years. When the stricture is complete, jaundice is permanent unless there be a biliary fistula above it. Formerly it was believed that stricture of the common duct was always due to injury, but lately since many more operations have been done for disease of the biliary tract and there has been more intensive study of the condition of the liver, it is known sometime to be the result of general obliterative cholangitis. In the absence of traumatism, some cases are probably due to persistent post-operative choledochitis. Nevertheless operative injury remains as the most potent etiological factor in the condition. The stricture may be a local, annular lesion or it may extend along the greater portion of the duct. Stricture at the terminal end may be difficult to detect unless probes be passed down toward the duodenum.

The glands in the wall of the common duct may harbor persistent infection which spreads by continuity of stricture until it becomes widely disseminated along the bile tube. The inflammation in the wall of the duct results in infiltration with leucocytes, deformity and distention of the mucous glands, and the formation of fibrous tissue leading to thickening and rigidity of the duct. Judd and Councellor carried out microscopic studies on the intrahepatic biliary tree and called attention to the fact that general obliterative cholangitis may exist for months before there are signs of stricture of the common duct. Stricture may be the result, as already stated, of cholangitis and ulceration. The pathologic changes result from infection of the glands within the walls of the duct as well as from the presence of stone. A stone that obstructs the common duct and causes proximal retention of bile may lead to ulcerative perforation and escape of the bile into the subhepatic fossa. My former interne and your fellow member, Dr. Vale, has related to me such a case occurring in his experience. Distention of the common duct with muddy bile exposes the walls of the duct to changes which may result in partial obliteration of its lumen. Neoplastic growths may affect the common duct as extensions from carcinoma of the gall bladder or they may occur as a primary tumor of the duct which is most commonly situated at the terminus of the duct in the peri-ampullar region.

Diverticula of the common duct are caused by obstruction in conjunction with a localized weakness of the wall. Rarely, a traction diverticulum may be the result of adhesions. Congenital dilatation of the duct which may reach the size of the small intestine has been encountered in a few reported cases, the causative factor being a diaphragm like occlusion at the lower end of the duct. The senior author on more than one occasion has encountered a diverticulum of the common duct large enough to constitute a cyst. Injury to the common duct during the course of operation, unfortunately, is not a rare occurrence. It usually affects the portion at the cystic duct juncture. Strong traction on the gall bladder preparatory to removal may angulate the common duct at this point so that if the effect to remove all of the cystic duct be too ambitious the clamp may include a section of the wall of the common duct which will be excised and the applied ligature is then on the side of the main duct. Should the ligature hold and healing occur, a stricture will follow. In case the ligature separates before healing, a biliary fistula is formed. Sometime the cystic artery escapes the clamp or ligature and retracts behind the main duct. Unless caution is observed in its recapture the haemostat may be applied to the common duct. Oedema and inflammatory exudate around the neck of the gall bladder and cystic duct make definition of structures difficult. In such instances it is wise to make a high ligation of the cystic duct. The watch word of surgery of the biliary tract is "See well what you do." This applies particularly to surgery of the common duct. The normal relations of the duct are often distorted by disease so that even the expert is not able to recognize it by sight and touch. Identification of the structure in question often can be made by aspiration through a long, fine needle attached to a syringe. The aspirate bile or blood, will distinguish between common bile duct and portal vein, the two structures most readily confused. The surgeon should be acquainted with the more common anomalies of the ducts. By exposing the duct at a point where there is the least amount of pathological tissue, it can be traced upward to the site of operation and handled with comparative safety.

Stricture of the common duct due to cholangitis may not give clinical manifestation for a considerable length of time after the primary operation. Postoperative, intermittent biliary obstruction is always more or less suggestive of stricture. The lesion, essentially, is the result of inflammation and contraction which eventually infringes upon the patency of the lumen of the duct until there are clinical signs of impeded bile flow. In those cases, usually hopeless, of obliterative cholangitis encountered in infants, it may be possible that the inflammation in the biliary tract was caused by toxins from the mother conveyed to the liver of the fetus.

Anatomically, physiologically, pathologically, and surgically, the ampulla of Vater rivals the gall bladder as the most important part of the extrahepatic biliary tract. Anatomically, it is important because of its position in the wall of the duodenum, where it is surrounded by the sphincter of Oddi. The sphincter plays a major role in the physiology of bile flow. It restrains the escape of the bile into the duodenum until the contractile force of the gall bladder in conjunction with reciprocal innervation overcomes its normal tonus. It is the most important agent in causing the gall bladder to fill with bile. As one of us (V. G. B.) pointed out in a previous paper, the findings of cholecystography should be interpreted in terms of the behavior of the sphincter of Oddi. The most potent factor in the absence of the gall bladder shadow in the cholecystogram is incompetency of the sphincter of Oddi. Pathologically, it is capable of playing a mischievous role when the sphincter is in spasm or when the periampullar structures are infiltrated by inflammatory exudate. Judd and Burden described a group of cases in which there was post-operative, noncalulous, intermittent biliary obstruction probably caused by spasm of the sphincter of Oddi. Surgically, under normal conditions of persistent contracture of spasm, it figures prominently as an etiologic factor in pancreatic oedema. Especially potent is its influence on the postoperative morbidity of biliary surgery. For years the senior author has called attention to this both by clinical demonstration and by the written page. Regardless of the type of operation on the common duct, whether it be for inflammation, stricture, stone, or neoplasm, it is not complete unless the patency of the duct through to the duodenum has been demonstrated to complete satisfaction. Were it possible to remove half of the sphincter for pylorospasm, there would be fewer residual conditions so disappointing to the surgeon and patient. One German surgeon has devised and uses graduated sounds for dilating the sphincter of Oddi. From our clinical experience, we do not believe that experimental data relative to reflux of duodenal contents constitute a major objection to instrumental dilatation of the sphincter. Thoroughness is the keynote in surgery of the common duct. The sequelae of carelessness mentioned elsewhere are disconcerting legacies. Only by delicate searching and instrumental exploration can one be sure that the papilla of Vater is open unless there be an obstructing or neoplasm.

The surgical procedures which have been practiced on the common duct are varied and ingenious. Especially so are those which have to do with restoration of continuity of the main bile channel. The prime motive in all is an uninterrupted passage for bile into the intestine. The resourcefulness of the surgeon is often put to extreme test. These supreme difficulties should be undertaken only by the surgeon of long experience, yet the unsuspected occasion may arise in the practice of the average surgeon. He must be prepared to act to extricate himself and the patient from a trying situation. If the problem can not be solved at once, an immediate crisis can be averted by providing for an external biliary fistula leaving the final steps to the operation to a time when circumstances are more favorable. The more common surgical lesions of the common duct call for a thorough operation procedure which is conservative in its radicalism.

In the case of the inflamed dilated common duct, incision, exploration, removal of the obstruction, and drainage by the T tube is the procedure. For the narrow stricture, sleeve, resection and closure by end to end union, leaving an opening in the anterior wall for the introduction of a T tube will usually curative. When the stricture is diffuse, it may be incised and a T tube inserted or the upper wide portion of the duct may be anastomosed to the duodenum or stomach by an inch to side junction.

Single or multiple stones in the duct, if not in the supraduodenal portion, should, if possible be milked back into the upper accessible portion of the duct where they can be cut down upon and removed. Once the stone is within the grasp of the fingers, it should not be allowed to escape until removed. If the stone be allowed to slip into one of the branches of the hepatic duct its recovery will be difficult.

When the stone occupies the pancreatis portion, especially the lower part, it is usually situated in a localized dilatation or pocket and its removal is difficult. Only rarely can it be forced into the upper portion of the duct. Several methods to extricate it must be tried. A gall bladder scoop may be passed down to it through an opening in the first portion of the duct and by manipulation the stone may be dislodged or broken and removed piecemeal. The stone may be pushed into the duodenum. When all these means fail, the duodenum should be mobilized, turned toward the left and the duct incised over the stone. Following removal, a T tube is inserted into the opening in the first portion of the duct in such a way that its lower horizontal limb extends down the duct into the duodenum.

A stone in the ampulla of the Vater usually can be pushed into the duodenum, or dislodged and removed above, or broken up with the aid of the scoop in the duct and counter pressure on the duodenum with the tips of the fingers. But all of these may fail and then the only alternative is direct removal through a transduodenal incision. We reserve this procedure as a last resort and only occasionally have been called upon to use it. It carries the risk of duodenal fistula. Crushing the stone in the duct is a dangerous procedure, because of the likely injury to the walls.

In the presence of a new growth, its location, size, and type, usually malignant, will guide the operator in deciding what is best to do.

Impassable or irremovable obstructions of the common duct are rarely encountered at primary operation on the biliary tract. If such be the case, with an intact gall bladder and a patulous cystic duct, then cholecystogastrostomy is the operation of choice.

In conclusion it may be stated that any discussion of the surgery of the common duct must take into consideration its normal and pathological history. The fact that its lesions usually represent complications of disease of the gall bladder and therefore are preventable by timely surgery.

Primary Staphylococcus Infection of the Nose, Lips and Face. Koslin, Irwin I. Annals of Surgery, 94:7-14, July, 1931.

There are few clinical and scientific entities in the practice of medicine, especially in the field of surgery, that present such a dramatic and concise clinical picture, with a high mortality rate, after comparatively short illness, as primary infection of the nose, lips and face due to the staphylococcus aureus.

From 1922, eighteen cases of primary infection of the nose, lips and face were admitted to the wards of Lebanon Hospital, of these cases, six were severe and the other were of the extremely mild type, with one exception, which had a temperature of 103 degrees F. for one day (the reason for admitting these mild cases to be discussed). The youngest patient was 12 years of age, and the oldest 71, the greatest percentage was between the ages of 40 and 50. Of this group, twelve were males and six females. Of the six patients with severe symptoms who died, four were males and two females, varying from 24 to 50 years of age. The duration of the illness was from four to twenty days. In all six there was a positive Staphylococcus aureus blood culture, with the subsequent cultures becoming progressively worse, with thrombosis of the cavernous sinus terminating in death. The cavernous sinus was involved on one side in two cases, but bilateral in two, meningitis in one, septicemia (only) in two others, and of this group one had a cellulitis of the face and another cellulitis of the nose.

The history of these cases started with a definite history as to injury, picking, scratch, abrasion, contusion, etc., or the spontaneous appearance of a pimple, which either subsided, or was disturbed by trauma (squeezing or cutting) or continued with increasing severity. The patient was usually admitted to the hospital complaining of swelling of the particular part, pain in the local area, shooting pain in the head, chills and fever, or was admitted in a comatose state. Examination usually showed the signs of inflammation of the part with the adjacent edematous appearance of the face, eyelids, forehead or lips. Chemosis, marked exophthalmos with congestion of the orbit, choked disc and retinal hemorrhages or coma were seen. None, however, showed hyperesthesia of the first division of the fifth nerve, or paralysis of the third or sixth nerves. Only one patient presented findings of bronchopneumonia which was of the pneumonic Type III, no signs of mestastatic abscesses were found in the series. It is of interest to note that only two of the mild cases had a history of diabetes, and one of these syphilis. No other chronic ailments were present. Two of the fatal cases had an incision and drainage done, with very little pus found. No ligation of the facial veins were done. The author emphasizes the fact that in the Lebanon Hospital series on case of primary Staphylococcus sureus infection of the face, lips or nose was present in any patient below the age of 12 years.

The suddenness of the appearance of this condition, the rapid progress of the symptoms, the high mortality rate, the frequency of this condition from adolescence onward and the fact that healthy well nourished individuals are prone to this infection with dramatic termination of life, make this subject an important one.

The following is a typical case: A young man notices a small pimple on his cheek (nose or lip), probably the result of a scratch, contusion or cut. The adjacent skin area is swollen and painful, as result of the inflammatory distention. Three or four days pass, the pimple has increased in size, the lower lid is beginning to swell, the face is swollen, the infected area is larger and appears to tbe ripe to the layman. He squeezes and expresses a little pus. A day or two later the condition either improves or the face becomes more painful, the eye lids more edematous, the inflammation appears angry-looking, shooting pains in the head and severe headaches and fever. The mechanical pressure during the process of squeezing broke down nature's barrier of defense, the indurated circumscribed granulation tissue, and the organisms which were in the localized area, gradually increasing in virulence, spread, producing a phlegmon. The facial vein becomes involved and a phlebitis follows. The primary focus (hair follicle) at this time extends through the skin layers to a circumscribed area of inflammation which is in the underlying tissue and important venous structures, and thus communicates directly with a vein or its branches. The result may be (a) a localized thrombophelibitis of the facial vein or (b) a minute erosion of the vessel communicating with the phlegmon. The facial vein, because of its patency and absence of valves, allows the inflammation to spread without any resistance in either direction, namely, upward toward the superior ophthalmic which enters the cavernous sinus, or downward to the deep facial which enters the pterygoid plexuses and on to the cavernous sinus. The first direction is retrograde and the commonest form of spreading of this infection. At this stage the bacteria may enter the blood stream either (a) through the minute erosion of the blood vessel, or (b) due to a thrombus. The supply of bacteria to the circulation gives rise to a septicemia with or without metastatic abscesses in other organs. The formed thrombus may (a) enlarged and extended through the entire length of the facial vein, thus obliterating the lumen of the vessel; (b) extend into the superior ophthalmic vein and into the cavernous sinus; or (c) break and give rise to a septic embolus which lodges at the origin of the cavernous sinus and grows into an extensive thrombosis, which may also extend to the opposite side, and give rise to a bilateral cavernous sinus by direct extension, the meninges become involved.

The original pathology has progressed to the point where there is a thrombosis which is infected, a constant source and supply and growth of bacteria to the blood stream. This thrombosis may appear in from two to twenty days, depending upon the virulence and amount of the organism, and the resistance of the host, or his ability to maintain his resistance. With the constant supply of bacteria, the severity of the symptoms increase and after a few days the patient dies, either because of an intervening infection such as pneumonia (not metastatic) or due to the primary infection (furuncle, carbuncle or phlegmon) of the face (lips or nose) and a blood stream infection (a) with or without metastatic abscesses in different organs, (b) thrombosis of the facial vein with or without the involvement of the cavernous sinus on one or both sides, or (c) meningitis with either of the above. Death is due to the toxicity of the infection with the cranial circulation.

The sphere of treatment has been divided into two groups, the operative, the nonoperative, conservative, physical treatment. At the Lebanon Hospital, it is a rule to have cases admitted to the wards, whether they be severe or mild, because of the fact that many mild cases have had exacerbations of the process after a period of from one to four days of apparent absorption of the infection, and for the reason that one cannot forecast with certainty the outcome. The patients are put to bed, and treated conservatively by the use of warm, wet dressings continually. Definite instructions to the House Staff are given, forbidding expressing of pus or sloughs from the wound, or the use of a scalpel.

It is a known fact that incisions tend to open the lymphatics and venous channels to further absorption of infection, and for this reason surgeons make incisions wide of the afflicted area in malignant diseases. Incisions are usually made several days after the inflammation has been in progress, at which time nature's barrier of defense has been formed. Therefore, the incision has the same action as trauma produced by squeezing or picking.

The surgical procedure of ligation of the facial vein has been advocated. Although many have reported cures, it is the general opinion that this procedure should be omitted from the treatment. It is obvious that one is unable to determine whether a vein or its branches are free from any infection material or are sound enough to be ligated. The application of a ligature about the vein may result in the dislodging of a thrombus. The ligation of the vein at one place will not necessarily prevent the infection from spreading to the opposite direction.

The treatment found most satisfactory is the use of warm, wet dressing. One readily appreciates the action of heat in increasing the blood flow to the surface. As a result of this, there is brought more antibacterial and immunologic serum to this area. Thus the object of this treatment is to localize the infected area and to assist in maintaining the barrier of defense and the resistance of the host. This form of treatment is simple, conservative, and more effective.

The Treatment of Chronic Osteomyelitis With Live Maggots. Child, Frank S., and Roberts, Edward F. New York State Journal of Medicine, 31:937-943. August 1, 1931.

About three years ago the late Dr. William S. Baer began treating chronic osteomyelitis with disinfected maggots. Because of the difficulty in propagating the maggots and rendering them sterile, the treatment did not become available to the medical profession until December of 1930.

Surgical preparation of the bone. As a preliminary to the maggot treatment the diseased bone is freely opened with an osteotome and all necrotic bone thoroughly removed. Cloaca or bone sinuses are chiseled out so that the entire diseased portion is freely accessable to the maggots.

The authors' technic at this operation is a soap and water cleaning of the part. This is done the night before the operation and again on the operating table. It must be remembered that maggots will not work in the presence of antiseptics.

The operative field is draped as for any operation, using sterile sheets and towels. Instruments are sterilized and sterile rubber gloves are worn. After thoroughly removing all sequestra the wound is packed with sterile vaseline gauze, and a pattern of the wound is cut from bandage gauze.

Implanting the maggots. A cage is necessary to confine the maggots and this is prepared by cutting a piece of 80-mesh brass screening cloth from the pattern made from the bandage gauze. The edges of this screen are inserted between single strips of sponge rubber split longitudinally. The opposing surfaces of the sponge rubber are first coated with rubber cement and then sewed together with the screen margin between. The screen is sterilized in an autoclave and then is ready for use.

Forty-eight hours after the operation the packing is removed, gas anesthesia usually being necessary. Strips of adhesive plaster, one inch wide, are placed on the skin all about the wound and flush with the wound edges. This is to protect the skin and prevent dermatitis. "Duo" adhesive is then painted on the adhesive plaster. This "Duo" is waterproof and more securely holds the cage in place and prevents the escape of maggots. Next, adhesive plaster the length of the cage is folded, adhesive surface out, and attach to the sponge rubber of the cage on the side which is to be against the wound. Everything is now ready for the maggots which are applied in the following manner.

Sterile normal saline solution is placed in the bottle containing the maggots, and the bottle emptied onto a small piece of sterilized screening cloth through which the water drains, leaving the maggots on the screen. With a sterilized wooden tongue blade the maggots are very gently scraped into the wound. Some prefer to use fine mesh gauze or a spoon made with screening cloth. Anything will do as long as the maggots are not injured. The cage is immediately applied, and secured in place by wide strips of adhesive extending from the sponge rubber to the skin, and then by narrow strips of adhesive placed at intervals across the cage. The adhesive must be spaced wide enough apart so as to provide light, which will drive the maggots deep into the wound, and to provide air which is essential to their vitality.

The cage should be inspected daily, for the profuse discharge may loosen the adhesive and permit the escape of maggots. It is best to allow this discharge to drain through the screen. The authors have tried cutting trap doors and aspirating the liquid, but they found that these openings made an easy exit for the maggots.

The maggots are left in the wound five days. Then the cage is removed and the maggots are washed out with sterile normal solution. Maggots buried deep in the granulation tissue are removed with sterile thumb forceps. A new implantation of maggots may be made at once, after cleaning the skin, but usually a dry pressing of parresine mesh and gauze is applied for 24 hours. With each application of maggots a new pattern of the wound is made. This is because it is preferable to discard the old cage, and also because the wound rapidly becomes smaller.

With the first application of maggots the authors administer a prophylactic dose of tetanus antitoxin. Their only reason for doing so is that

Baer reported tetanus in one of his early cases (maggots not disinfected).

Preparation for maggots. The following disinfecting procedure is recommended. Fly eggs laid by the species Phormia regina and Lucilia sericata on either hog spleen or raw beef are removed by gently brushing off the clumps with the flat end of a toothpick into a beaker of sterile distilled H2O. The water should be at a temperature of 4 degrees C. to prevent hatching of the eggs before disinfection takes place.

The apparatus for disinfection consists of a covered Gooch crucible attached to a filter tube by means of a thin walled rubber tubing collar. The crucible and cover are sterilized separately, the crucible containing a small piece of fine mesh cheesecloth placed over the perforations. A short piece of ordinary rubber tubing is connected with the lower end of the filter tube which, with collar tubing attached, is immersed in 3 per cent phenol when not in use. When the crucible, cover and filter tube have been assembled, a pinch clamp is attached to the smaller sized rubber tubing and the apparatus is ready for disinfection.

Approximately from 1,100 to 1,200 eggs are transferred to the cheesecloth layer in the crucible and are rinsed several times with sterile distilled H2O (temperature 4 degrees C.) to mechanically remove bacteria. The pinch clamps are thoroughly disintegrated by gently agitating them in from 3 to 4 c.c. of a sodium hypochlorite solution yielding 0.5 per cent available chlorine. Complete separation of the clamps is effected in from one-half to one minute, and is important in that it makes the whole surface of each egg available to the action of the disinfecting agent. After loosening the clamp, the eggs are thoroughly rinsed with sterile distilled H2O to remove all traces of chlorine, the clamp is retightened, and a neutral solution containing 4 per cent formaldehyde added to fill up the crucible. The eggs are exposed to this disinfectant for three minutes, then the clamp is loosened, and the eggs are rinsed a third time with sterile distilled H2O. All agents in this procedure are used at a temperature of 4 degrees C.

As soon as most of the fluid has drained off, the piece of cheesecloth holding the disinfected eggs is transferred with sterile forceps to a 2 oz. bottle containing about 4 c.c. of a sterile semisolid medium. The medium consists of 1 per cent agar, desiccated liver and dried yeast. Experience has shown that poor hatching results if the cloth with eggs is dropped on the medium, and therefore the bottom surface of the moist cloth is smoothed out so that it will adhere to the bottle wall.

The bottle is then placed in a hatching incubator (regulated for temperature, humidity and ventilation with exclusion of light). Twenty-four hours later hatching is completed and the tiny maggots are tested for sterility by inoculating duplicate sets of fermentation broth tubes for detecting aerobes and deep meat tubes for detecting anaerobes.

After sterility testing the bottle of maggots is returned to the incubator for another day of growth and then the bottle is transferred to the chill room (temperature 4 degrees C.) to await the results of the sterility tests. Each bottle is held for a four-day reading on the sterility tests before it is shipped. On the average, the technic just described results in 90 per cent hatches free from bacterial contamination. It must be remembered that each bottle is subjected to a four-tube test, and if only one of these tubes shows a contamination within four days after testing, it is not released. Moreover, all tests are actually held in the incubator seven days as a check on the dependability of the sterilizing process. The hatch after disinfection varies between 90 and 100 per cent of the hatch observed from nondisinfected eggs, the fertility of the eggs being comparable.

The method of shipment consists in packing the bottle of maggots next to a can of natural ice, which is then surrounded by a 4 to 5-inch layer of pulverized cork as insulation between the chilled maggots and the walls of the carton. Since the ice in the package and the type of medium in the bottle both serve to retard the growth of the maggots while retaining their viability, they remain during transit at approximately the same two-day stage of growth at which they are shipped, and therefore may be left in the wound five days unless unfavorably affected by wound secretions or lack of food. Upon arrival, a bottle of maggots may be kept in an icebox at 4 degrees C. for a few days before implantation if necessary, but this is obviously not desirable since the maggots are perishable and cannot be stocked indefinitely. Such a procedure is certainly not feasible when a bottle remains more than two days in transportation. All shipments are sent special delivery to facilitate transportation.

Of no less importance than the problem of developing an effective disinfecting procedure is the proper breeding of flies to insure a constant supply of fertilized eggs. This involves attention to environmental factors such as temperature, humidity and ventilation, and more particularly to selectivity of strains in all the stages of the fly's life cycle. Another contributing factor is the choice of foods which supply protein and carbohydrate in forms readily assimilated by the larvae and adult flies. If cognizance is taken of these requirements, one may be fairly well assured of constant and abundant laying of fertilized eggs by young and vigorous flies.

At the beginning of the treatment the patients are annoyed by the crawling sensation and by what some of them describe as the itching from the maggots. Occasionally one is obliged to give a mild sedative at night. As the treatment progresses and the patients note their rapid improvement, they become accustomed to this irritation and rarely complain. An interval of 24 hours between implantation gives the patient a respite from this.

Frequently on the third or fourth day there is a rise in temperature to 102 or 103 degrees. The temperature returns to normal as soon as the maggots are washed out. This fever has been noticed particularly when the discharge has been profuse and is due probably to insufficient drainage.

The effect on the wound is very remarkable. After the second or third implantation the bone has the appearance of having been bored out in the manner of a cylinder of an automobile engine. Granulation tissue soon appears and is nearly always compact, rarely becoming exuberant. Later small pieces of sequestrum, loosened by the action of the maggots, appear and are easily removed without discomfort to the patient.

There is no purulent odor, and free pus is never apparent. On removing the cage preparatory to washing out the maggots, there may be detected a faint briny odor which seems to be characteristic of the maggots.

Baer has stated that from six to eight implantations were sufficient to effect a cure. The authors have found that in the majority of their cases this was not sufficient. The greatest number of implantations used was thirty. The smallest implantations was eight. The average number has been from 15 to 18. Time required to effect a cure has been from eight weeks to six months.

The maggot treatment is apparently beneficial in the treatment of tuberculous sinuses.

Occasionally on removing the cage all of the maggots have been found dead, although the wound was not filled with granulation tissue. In the succeeding implantations the maggots were alive and working. Dead maggots do not always indicate a cure.

Nine cases of chronic osteomyelitis and one case of tuberculous sinus, a total of ten cases, have received the Baer treatment of maggots. Six of the patients were children and four adults.

Of the nine cases of osteomyelitis, eight have healed satisfactorily (an additional lesion in one will require treatment), and one will require another operation and treatment. The tuberculous sinus has closed. That is, all lesions treated in the nine cases have healed with the exception of one. This one exception was due to failure to remove all necrotic bone because of pathological fracture.

The preparation of the bone by osteotomy is a surgical procedure and should not be undertaken by anyone not familiar with bone surgery.

It is the opinion of the authors that this is the most satisfactory treatment of chronic osteomyelitis.

UROLOGY

By Tom R. Barry, M.D., F.A.C.S.,
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A Study of the Blood Pressure in Prostatism, Including Cardiovascular Changes. J. L. Seng. Jour. Urol., 1931, xxv, 313. Abstracted by John F. O'Neil, M.D.

This report is based on 454 cases of prostatism which were operated upon successfully. A study of the cardiovascular system in fatal cases disclosed arteriosclerosis in 28 per cent, enlargement of the left heart in 46 per cent, enlargement of the right heart in 13 per cent, and chronic endocarditis in 20 per cent. The conclusions drawn by the author are as follows:

1. The blood pressure alone is not a satisfactory index of the condition of the cardiovascular system, but is suggestive.
2. The risk of prostatectomy is least when the blood pressure is normal. In cases with a normal blood pressure healing occurs rapidly. Fatalities are usually due to cardiac or pulmonary involvement.
3. When the blood pressure is low, the surgical risk is greater. Healing occurs sluggishly. As a rule there is advanced renal and cardiovascular degeneration which makes it necessary to limit operative procedure to the simplest measures. Death frequently results from cardiac and renal involvement.
4. The surgical risk is greatest in cases of high blood pressure, in which cardiovascular, pulmonary, and renal lesions are apt to be present.
5. A large percentage of deaths following prostatectomy are due to lesions of the cardiovascular system, especially those involving the myocardium.
6. The least controllable of the complications following prostatectomy are pulmonary complication.
7. The mortality from renal involvement after prostatectomy has been greatly reduced.
8. In the presence of serious lesions of the cardiovascular, renal and pulmonary systems, special care must be taken to prevent infection during prostatectomy.
9. The operative mortality of prostatectomy may be lowered by a more careful search for, and study of lesions of the cardiovascular system, more care in the selection of cases for the operation, and prolonged drainage in cases with severe myocardial change.

The Comparative Value of the Arsphenamines in the Treatment of Early Syphilis. A. Benson Cannon, M.D., and Marie B. Karelitz, M.D., New York, Jour. A. M. M., Nov. 21st, 1931, Vol. 97, No. 1.

This review represents a study of 436 patients over a period of five years. It comprises only those whose history showed the infection to be not over six months duration when treatment was begun, and to have remained under treatment and observation for not less than six months thereafter.

Investigation was made as to (1) the disappearance of visible lesions, (2) the reversal of the Wasserman reaction, (3) complication arising from administration of the different drugs, and (4) the number and nature of relapses.

Either mercury or bismuth was used concurrently with the arsphenamines in the majority of cases.

The cases were divided into primary and secondary. To test the therapeutic value of the three forms of arsphenamines, namely, salvarsan, neosalvarsan and silver arsphenamine, the time from the start of treatment until the lesions entirely disappeared was recorded. In the primary cases, injecting weekly, where salvarsan was used, the average length of time for the chancre to disappear was 9.8 days. With the neoarsphenamine it was 13.4 days.

In the secondary group, using arsphenamine, the time required for complete disappearance of primary and secondary lesions was 17.5 days, with neoarsphenamine 23.7, with silver arsphenamine 25.3 days. The result shows a fewer number of injections, smaller quantity of drug, and a shorter time for disappearance of lesions in primary and secondary syphilis with salvarsan than the other forms of drug.

In both primary and secondary syphilis the Wasserman became negative in a shorter period, under fewer injections and a smaller amount of the drug with arsphenamine than either of the other drugs. Of the cases of primary sero-positive diagnosis, with arsphenamine the average time required for a negative reaction was 38.2 days, with neoarsphenamine the average was 81.6 days, with silver arsphenamine it was 65 days.

As to relapses, combining all primary and secondary cases treated the results were as follows:

(1) Of those treated with arsphenamine 6.8 per cent showed a serologic relapse.

(2) With neoarsphenamine 26.2 per cent relapsed.

(3) With silver arsphenamine 50 per cent relapsed.

In considering the reactions observed it was found that comparing the immediate mild reactions silver arsphenamine showed the most favorable while neoarsphenamine and arsphenamine compared about the same. But in immediate serum reactions neoarsphenamine was less favorable than either of the others.

As to delayed reactions such as dermatitis, jaundice, neuritis, nephritis, the totals showed the occurrence to be one to every ten patients treated with old arsphenamine; for neoarsphenamine and silver arsphenamine each one to six. For dermatitis alone the ratio was 1 to 14 for neoarsphenamine. The time of the onset of dermatitis occurred with neoarsphenamine on an average of the seventh or eighth injection while those from arsphenamine occurred around tenth or eleventh.

From the foregoing, the conclusions are that arsphenamine has proved in all respects the most satisfactory of the group. It must be remembered that this observation has been carried out in clinic work where the drug was prepared in large quantities, on routine days, while in private practice it is quite a different matter. I doubt the practicability of the use of salvarsan in private practice and believe we are fast discontinuing its use in private work.

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THE ASCHEIM-ZONDEK TEST—ITS VALUE IN TUBAL PREGNANCY BY CASE REPORT*

JAMES R. REINBERGER, M.D., Memphis

THE Ascheim-Zondek test for pregnancy which is in general use today resulted from Frank's isolation of the female sex hormone from the blood. Later Allen and Doisy estimated the amount by the R. M. U. method, i. e., the amount of hormone present in the body fluids when injected into sprayed rats caused cornification of the vaginal mucus membranes within a given number of hours. This test proved difficult to the inexperienced because of the necessitated recognition of a normal vaginal spread. Ascheim and Zondek simplified matters by using this hormone more readily recovered in the urine of pregnant women, (due to hypertrophy of the pituitary gland with a spill over of the excess in the urine) and when injected into immature mice about twenty-one days old and not weighing over 6 grams caused definite changes in the ovaries. This hormone acted upon the ovary and produced first hyperemia and congestion, more often ripening of the primordal follicles, sometimes hemorrhage of the ovarian substance and lastly leutinization of the newly formed corpora leutea. But even this test complicated matters for the average practitioner, in that large colonies of mice would have to be kept at the above stated age and size which is almost impossible, unless one was connected with the laboratory or university. Friedman and Lapham realized this factor and later modified this test by using the rabbit. Their belief was that the rabbit obviated the difficulties of the original Ascheim-Zondek procedure because (1) the ovaries of an isolated, unmated female rabbit, neither contained corpora leutea nor corpora hemorrahagica, inasmuch as the rabbit does not ovulate spontaneously, but only after coitus. (2) That the urine of pregnant women contains these substances, which simulate in their biologic effects the anterior lobe of the pituitary. (3) The ovary of the rabbit quickly responds to the injection of these substances by the formation of corpora leutea or corpora hemorrhagica. Their method, however, consisted of injecting the urine into an unmated mature female rabbit thrice daily for two days in 4 c.c. doses. The rabbit being killed within 48 hours after the first injection. If the ovaries contained either fresh corpora leutea or large bulging corpora hemorrhagica, the reaction was positive, but if the ovaries contained neither of these and only clear unruptured follicles, regardless of their size the reaction is negative. But one who has injected rabbits by using the veins of the ear will know that it is not so easy nor convenient, particularly if it is necessary to repeat this thrice daily for two days. With the difficulty probably in mind, Schnieder modified Friedman's technique and injected from 7 to 10 c.c. of urine intravenously, killing the rabbit from 30 to 48 hours and from all reports, the results are just as accurate as by any other method, providing the rabbit met all requirements as outlined by him. This modification is the one that I have been using and thus far have found one hundred per cent accurate to date. It's use has been so extensive that its possibilities for normal uterine pregnancies are almost beyond question. As an aid in the differential diagnosis of obscure pelvic conditions, it is of great value and possibly the only real evidence where a complicated pregnancy alone or combined could be the point in question. Numerous reports of early chorio-epitheloma have been confirmed with this test. Likewise, an occasional ectopic pregnancy and incomplete abortion. The case to be reported tonight was of obscure origin in which an Ascheim-Zondek test was positive in a suspected ectopic pregnancy.

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*Read before Memphis Obstetrical and Gynecological Society, Oct. 23, 1931.

CASE REPORT

Mrs. L. M. L., age 23, para. 1.

Family history, negative.

Personal history: Had influenza in 1928. Malaria 1923.

Menstrual history: 14x28x6; pain on the first day.

Obstetrical history: Had never had any history of disease of the female organs and became pregnant three months after marriage. She delivered normally after a bag induction for premature rupture of the membranes followed by uterine inertia July 12, 1929, of a normal male child. Her puerperium was uneventful. Post-partum examination at the end of 42 days was negative, except that the superficial lacerations of the cervix had to be cauterized and was discharged Dec. 4, 1929. She was seen again Aug. 14, 1930, or approximately one year following the delivery with a prolonged period and pain in the right side. Examination at this time revealed a negative examination with the exception of a slightly enlarged and tender right ovary.

Diagnosis—Disturbance in the absorption of the corpus leutem. She was not seen again until Aug. 31, 1931, or approximately one year from last menstrual disturbance. She complained of nausea, but no vomiting, with pain in right side. L. M. P. Aug. 18, 1931, for five days.

Examination—Uterus not particularly enlarged, freely movable and normal position. Right ovary palpated, but not tender. Left not palpable, but no tenderness. She was seen in the office again on Sept. 15, 1931, and stated that she had menstruated Sept. 4, 1931, for five days with very slight discomfort in left side.

Examination—There is a dark, thick, bloody discharge from the cervix which has been present for the past four days. The uterus is slightly enlarged. There is some tenderness on motion of fundus. A small mass is palpated in the region of the left ovary, which, seems to be adherent. Motion of cervix caused no pain signifying that there was very little blood, if any, in culdesac. Based on the menstrual history of amenorrhea, plus the flowing and discomfort eleven days past her period, and of the recurrence of the bloody discharge today, plus the mass in pelvis suggested the almost positive diagnosis of a minute rupture or tubal abortion of tubal pregnancy. An Ascheim-Zondek test was started with 10 c.c. of urine at 5 p. m., Sept. 15, 1931, and with the importance of an early positive diagnosis, I had decided to do a 24-hour Ascheim-Zondek. The rabbit to be killed at 5 p. m. of the next day. She was warned of the possibilities and told to report if there was any faintiness or unusual pain in her abdomen. She reported to my office the next morning by telephone that she was feeling fine and that there was no pain in her pelvis, that the discharge had practically ceased. At 12:30 her mother happened to visit her by chance and found her semi-conscious. She was sent to the hospital, B. P. was 60/40 R. B. C. 3,000,000 H. G. B. 60 per cent. She was given saline intravenously and subcutaneously and other usual stimulants. Within one hour her B. P. was 80/60 and patient was reacting only very slightly. She was operated upon under morphine-scopolamin and novacaine and found the abdomen filled with blood and a left ectopic pregnancy, tubal, ampula. The tube and ovary were removed, the blood was left within the abdomen. The transfusion of 350 c.c. of citrated blood was given. Recovery uneventful and the patient left hospital on 12th day.

The rabbit was killed at the stated time and the test was positive.

This case certainly shows the advisability of doing an Ascheim-Zondek on every suspicious case of ectopic pregnancy for if it could have been done several hours earlier the patient could have been operated in excellent condition, rather than the almost moribund state that required urgent and drastic treatment to save her life.

Ninety-ninth Annual Meeting

TENNESSEE
STATE MEDICAL
ASSOCIATION

Memphis April 12, 13, 14, 1932

ACUTE OTITIS MEDIA WITH PAIN IN TRIGEMINAL REGION*

R. G. Reaves, M.D., Knoxville

Acute Otitis Media is a local infection often met with and usually responds fairly readily to proper treatment, but always loaded with a bomb that may explode with a terrific report. Knowing the possibility of an ear infection, I am never satisfied until the discharge ceases and I can pronounce the case well. Since beginning my specialty, I have had the utmost respect for ear infections, but I must confess that my respect was increased in 1930 when I saw three children with meningitis complicating acute otitis media without operative mastoiditis. It is true that the mastoids were involved in all three cases but not broken down.

There is frequently referred pains with some unilateral headache, in cases of acute otitis media, which have no significances save that some of the many nerve connections in the neighborhood of the middle ear are inflamed. There are also referred pains in the trigeminal region which have the utmost significances and warns us that danger is near. How can we recognize these pains and what shall we do?

The first thing we should do is to acquaint ourselves with the anatomy of the petrous portion of the temporal bone and the nerves in relation to it and the middle ear. The petrosal pyramid may be a diploetic or pneumatized bone. Examination of a well pneumatized temporal bone reveals the fact that pneumatic cells are by no means limited to the mastoid bone. They are found in the squama, zigoma, floor of the middle ear, under the tegmen and more extensively about the mouth of the eustachian tube. Cells have been found to lead from the mouth of the eustachian tube, from the epitympanic space, from behind the posterior canal into the pyramid. Hence these cells having direct connection with the middle ear and mastoid antrum may carry infection into the petrous pyramid. Frank suppuration may take place in these pneumatized cells while osteitis is more likely to be found in the diploetic pyramids (Kopetzky). H. J. Profant (1), after studying development of the temporal bone during fetal life and after making a study of fifty adults bone comes to the following conclusions: "1. Pneumatic cells are present in the petrous bone more frequently than is generally known. 2. Two routes of cells extending to the petrous tip are described: (a) the antrum-epitympanic and (b) the hypotympanic. Because anatomically the cells can always be traced to one of these two routes, embryologically the cells develop in this manner, and clinically the infection may extend from the hypotympanic space as well as from the antrum-epitympanic space. (One must concede the possibility of an infection entering the route near the orifice of the eustachian tube before, or even without, entering the tympanum.)" The above conclusions are not entirely in accord with Eagleton's observation of cases.

The great superficial petrosal nerve arises from the geniculate ganglion implanted on the external genu of the facial nerve in the facial canal in close proximity to the middle ear. It runs forward and inward in the hiatis canalis facialis and then in a groove on the anterior surface of the pyramid beneath the dura to join the great deep petrosal, the latter with "myelinated fibres from the glossopharyngeal and unmyelinated postganglionic fibres from the superior cervical ganglia by the way of the carotic plexes"—Eagleton (2). The great and deep petrosal join to form the Vidian nerve.

Irritation of the great superficial petrosal, which lies in a bony canal close to the middle ear, may give rise to pain referred to the second branch of the fifth nerve because of its communication through the

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*Read before the Eye, Ear, Nose and Throat Section, Tennessee State Medical Association, Knoxville, April 14, 15, 1931.

Vidian nerve to Meckel's ganglion which is connected with the second division of the fifth nerve.

Lateral to the hiatis canalis facialis is the smaller canal for the lesser superficial petrosal which runs from the geniculate ganglion to the otitic ganglion. Irritation of this nerve through its connection to the otitic ganglion which is attached to the third division may give rise to referred pain in the lower facial region.

The tympanic plexus situated in grooves on the surface of the promitory connects with the lesser superficial petrosal, the great deep petrosal and glossopharyngeal.

"*Sensory Elements of the Glossopharyngeal Nerve*—The glossopharyngeal nerve in its intradural portions is probably a special sense nerve devoted to gustatory and secretory functions, but its communicating fibres which ascend through the temporal bone and re-enter the cranial cavity through Jacobson's tympanic plexus to the small superficial petrosal and by the small deep petrosal and the carotid plexus in the floor of the middle fossa probably contain sensory elements. The great deep petrosal formed by the small deep petrosal and fibres from the carotid plexus and Jacobson's plexus probably obtain their fibres from the petrosal ganglions.

"*Muscular Involvement of the Fifth Nerve in Suppurative Lesions from Irritation of the Glossopharyngeal*—In suppurative disease, facial pain with trismus may follow irritation of the tympanic plexus of the glossopharyngeal (Jacobson's) such as may be caused by a plug of cotton in the external canal of the middle ear causing a congestion of the deeper parts (Uffenorde's case)." Eagleton.

The fifth nerve passes through a ringlike opening of the tentorium over the petrosal about one-half inch from the apex and the gaserian ganglion lies on a depression on the anterior surface of the petrosal.

"The ophthalmic branch has a longer course in Meckel's cave than the second or third branches. It is firmly adherent to the dura of the cave on its under and inner side, and to the cavernous sinus, from both of which it can be separated only with difficulty. Its ganglionic portion lies flat on the dura which is adherent to the bone of the petrous apex and the petrosphenoid articulation mesial to the sector supplying the second and the larger portion going into the third branch.

"On the other hand, the ganglionic fibres of the second and third branches lie on the elastic cushion formed by the internal carotid artery as it runs in the open foramen of the carotid canal. Both the second and third branches enter the cave without adhesion to its dural covering. They also leave the cave anterior to the cancellous tissue of the petrous apex.

"Anatomically, then, the ganglionic and peripheral portions of the second and third divisions of the fifth nerve are protected from osseous or dural inflammation, either of which may cause irritation of the ophthalmic portion.

"Anatomically, the first branch is especially apt to be affected by periosteal swelling as the fibres to the first branch pass over the cellular area of the petrous apex at its junction with the sphenoidal base, where cancellous tissue is apt to be abundant. But probably it is the "pulling" in the area of its adhesion to the first branch, the result of the inflammation of the cancellous tip and petro-sphenoid articulation, that gives rise to the extra-ocular pain in the early stages of caries of the petrous apex, as it is doubtful if inflammatory infiltration of the root alone—as occurs in the later stage of abscess formation—will originate pains.

"If an extradural abscess forms during an infective osteitis, then a neuralgia from direct pressure of any branch of the trifacial nerve may occur (Gradenigo). Such direct pressure is doubtless the cause of the second and third branch pain in cases of exudate into the subdural space of the middle fossa. I have seen one case in which toothache was the result of a brain abscess, another of cavernous sinus suppuration and several cases of retro-ocular pain on filling the brain abscess with water, the pathologic lesion being confirmed by autopsy or operation.

"Also, I have seen numerous cases of localized meningitis of the base of the middle fossa secondary to bony caries of the external third of the petrous bone which have occasioned headache and pain around the eye, probably from a localized collection of fluid in the middle fossa, as the evacuation of the fluid associated with removal of the carious bone gave immediate relief to the pain." (Eagleton).

The sixth nerve passes into Dorello's canal at the apex of the petrosal and from there into the cavernous sinus. The rigidity of this canal is what causes paralysis of the sixth nerve when slight edema occurs in this region.

Thus I have briefly covered some of the important anatomy in this region and for further study I refer you to papers by Eagleton and Profant in Archives of Otology, March, 1931; Meltzer in Archives, January, 1931, and Kopetzky in Annals of O. R. Laryngology, December, 1930.

The first case I wish to report is that of a deaf boy 8 years of age, who had been sick with the flu for about one week. He complained of pain in his left ear two days before I was called. On examination I found pus coming from small perforation in drum which was swollen and congested. There was no tenderness or edema over the mastoid. There was moderate rigidity of the neck and positive Kernig. A large incision was made in the drum. A lumbar puncture was done—fluid cloudy and under pressure. Growth streptococci. Child lived about eight days after I opened the ear. He never complained much of pain or severe headache. Autopsy revealed diffuse leptomeningitis. There was no necrosis on the dural surface of the petrous or mastoid bone. The mastoid cells about the antrum contained pus, but there was no breaking down. The meningeal infection in this case must have been by venules connecting the middle ear with intra-dural space. I doubt that any surgery would have been of value in this case.

Case 2—Girl (K. L.), age 6, complained of earache in both ears on April 5th, 1930. Child continued to complain some of left ear and was running some temperature. On April 10th I was called and found child with temperature 102. Left drum bulging and congested. Paracentesis under general. Serous discharge. Patient seen on 11th—ear draining satisfactorily. Temperature running from 100 to 102.4. Very irritable. 12th, condition unchanged. Complained at times of pain in lower teeth (L). 13th, ear draining. Temperature 100.6. Very irritable. Complaining of pain in lower teeth (L) at times. Not being satisfied that the ear was the cause of the continued temperature and not finding tenderness or sufficient evidence that the mastoid was giving much trouble I advised the parents to call their family physician to go over the child if the temperature went above 102 that day. The temperature did go above 102. The doctor was called and over the telephone he assured the family that it was the ear and there was no need of his coming. On April 14th patient seemed slightly better. April 15th, mother reported that child had had a good day. I saw the child about 5:30. Temperature 101. Seemed fairly comfortable and not complaining of ear. There was no discharge. The drum was thick and congested. By 8 P. M. temperature had gone above 102. Paracentesis under ether. Very little discharge. April 16th child had temperature 104, marked rigidity of the neck and positive Kernig. Taken to hospital. X-ray of mastoid (L) showed some intracellular thickening with some haziness, but no breaking down. Lumbar puncture pressure 490 m.m. (water), cloudy. Growth pneumococcus. Mastoidectomy. Cells intact. No pus but congestion. Some soft congested bone about antrum. No necrosis over middle or posterior fossa. Sinus exposed and found normal. Patient seemed much better on the morning following the operation. No further lumbar punctures were done. Child continued to run a high temperature after 17th and died on April 24th.

Here again is a case where there is no evidence of extension from the mastoid and infection probably took place by thrombophebitis from the middle ear early in the infection and gave rise to a localized infection in the middle fossa about third division of the fifth nerve and then found its way into the meninges about the tenth day from the beginning of the illness. Had the seriousness of this case been recognized early and one was bold enough to go into the middle fossa the abscess might have been evacuated and the child saved. But such procedure has its danger and there may be wisdom in hesitation.

Case 3—Female (A .F.), age 11. T. & A. May 28, 1930. Discharged in good condition on the 29th. Parents stated child did unusually well until June 2nd at which time she had a hemorrhage from nose and throat. Continued to have some trouble off and on and was readmitted to the Infirmary June 6th. Quite a little hemorrhage from naso-pharynx on afternoon of admission. Nose irrigated with warm saline. Thromboplastin with some adrenalin added dropped in nose; 5 c.c. of 10 per cent calcium chloride given intravenously. No further trouble with bleeding except slight hemorrhage the next morning. June 7th, temperature 102. Right acute ear. Paracentesis. June 8th, L. acute ear. Paracentesis. June 9th, some tenderness over both mastoids. Transillumination: Right moderately dark, left slightly dark. Urine showed a large number of pus cells, pyelitis. Patient continued to run temperature from 100 to 103 till June 13th and then normal for the next week. Ears improved and urine cleared up. During this week of normal temperature patient complained of pain in right temple, over a rather small area about half way between eye-brow and upper part of ear. Patient discharged on June 21st. Seen again on June 28th with history of having been having severe attacks of pain in right temple and running an intermittent temperature. When seen, ears dry and in good condition. No pain. Eye ground, temperature and pulse normal. Readmitted June 29th, at 10 P. M., with complaint of severe attacks of headache and having temperature at times. Examination: Ears negative. Transillumination and x-ray showed that mastoids had apparently cleared up. Eye grounds negative. Temperature 99.4, pulse 100. Slight stiffness of neck and slight positive Kernig's. No complaint of any pain. Early next morning temperature 104, headache, pain down back, stiff neck and positive Kernig's. Lumbar punctures. No marked increase in pressure, fluid cloudy, cell count 1,700, and gram positive diplococcus in smear. Patient ran a very high temperature, 105, throughout the day. Consultation was held with Drs. R. S. Leach, W. R. Cross, H. C. Long and Thomas McKinney of Nashville. We agreed that our case was hopeless. Family wanted serum given and we decided to give anti-pneumococcus serum Type I. Type I was not available; 50 c.c. of Type I, II and III given intramuscularly at 1:30 a. m. July 1st. Temperature, 12 midnight, 104, at 4 a. m., 103.8, at 8 a. m., 103.6, and continued to drop about one degree for every four hours until reaching 100 at 12 midnight. Serum repeated (50 c.c.) at 9 a. m. and 5:30 p. m. Fifty c.c. of anti-streptococci serum was given as the report was now at hand that culture showed the organism to be streptococcus (non-hemolyticus). Spinal puncture at 9 p. m.; 15 c.c. of cloudy fluid, pressure 180 (water). July 2nd, temperature reached 102 at noon. Spinal puncture at 9 a. m.; 30 c.c. fluid slightly cloudy, cell count 700. 10:20 a. m., blood transfusion 300 c.c. Red blood cell 2,020,000 and hemoglobin 45 per cent at 9 p. m. Red blood cells 5,030,000 and hemoglobin 69 per cent on July 4th. The count increased over 100 per cent and hemoglobin 53.3 per cent. Temperature went to 100.8 on July 3rd and 99.4 on the 4th, hitting normal on the fifth and remaining there afterward. Other symptoms improved progressively as the temperature improved.

Summary of Progress: Very high temperature June 29th, big drop July 1st, gradual 2nd, 3rd and 4th, hitting normal the 5th.

No growth was ever obtained from spinal fluid cultured taken on 1st and 2nd. The organism apparently having been killed out in forty-eight hours after general meningitis had set up. What happened? Did the serum given produce this result or did the patient marshal all of her anti-bodies on June 30th, when she ran a high temperature all day, and killed out the organisms? This is undoubtedly a case of localized meningeal infection from thrombophebitis. The mastoid and ear condition had cleared up when the localized abscess emptied itself into the meninges. There was evidently no feeder to keep up the meningitis. This of course was favorable to recover. The localization must have been in the outer part of the middle fossa. It would not be fair to the mother not to say that she met me with a smile on the morning of July 1st, after having spent the night in prayer, confident that the child would get well and she never lost hope afterwards. In this case the doctors all worked together and ended up with a feeling that we had done our best and extremely happy that our patient lived. I might add that the patient is entirely free from any bad after affects. The local pain in the right temple completely disappeared after generalized meningitis set in. The child's general health has greatly improved, growth rapid and temperament completely changed for the better.

Case 4—Female (R. W.), age 20. Acute ear (L) for ten days. Pain and tenderness in front and behind ear and pain along border of lower jaw and unable to open mouth more than a c.m. for the past week. Nov. 17, 1930, simple mastoidectomy. All cells involved. Breaking down anterior of sinus. No exposure. On passing probe into aditus serum escaped with a spewing sound. Repeated with same result. This indicated some unusual pressure about middle ear. Patient ran temperature around 102 for three days and then about one degree for the next seven days. Trismus still present but patient could open mouth better. Still tender in front of ear and having some pain along lower jaw. Mastoid wound doing fine, but an unusual amount of pus coming from aditus. Two weeks after operation patient improved, but still having some tenderness in front of ear, some trismus and some pain in lower jaw. Normal temperature. Three weeks (Dec. 8, 1930) after operation patient complained of severe pain in the three divisions of the fifth nerve. Trismus worse. More tenderness in front of ear. No drainage from aditus. Temperature 99. Dec. 9, 1930, x-ray: V. C. haziness about left middle ear and fossa extending to left sphenoid. Dec. 12, 1930, patient complained of diplopia. Severe pain in region of trigeminal. Temperature 99.4. Trismus. Eye ground negative. Pus in canal. Drum congested, thickened and slightly bulging. Paracentesis, pus. White blood cells 9,500. Dec. 12, 1930, quite a bit of drainage from middle ear for the past two days. Temperature normal. Dec. 14, 1930, diplopia gone. Patient improving. Dec. 18, 1930, improving. Dec. 25, 1930, ear dry. Dec. 28, 1930, ear dry, wound practically healed. Patient discharged.

This patient had trismus and pain in the third division of the fifth nerve early in the ear infection. The spewing sound from the aditus gave me a very uncanny feeling that there was something unusual about this case. The persistent discharge from the aditus and the amount of discharge from the middle ear after reopening indicated some cells feeding into the middle ear. The pain in all three divisions of the fifth nerve and the diplopia points to congestion about the tip of the pyramid. The above facts and findings lead me to believe that there were some paratubal cells leading into the pyramid and that these cells finally drained out through the middle ear.

In Case 2 there was irritation of the third division. In Case 3 there was localized pain in temporal region probably due to a localized meningitis in middle fossa involving the meningeal nerve.

"*Value of Lumbar Puncture in Diagnosis and Treatment*: Clinically, localized meningitis may be eliminated by the absence of sepsis and an examination of the fluid obtained by lumbar or occipito-atloid puncture. Consequently, it has become my practice before operation on the mastoid to perform lumbar puncture in all cases of facial pain, as the absence of increased pressure and heightened cell count of the fluid adds security to the diagnosis of a nonfatal form of neuralgia." (Eagleton).

Eagleton calls attention to the fact that infection about the tip of the pyramid causes pain in the first division more often than the other two. He says that this is due to the fact that the first division is more closely adherent to the dura and surrounded by the dura entering the cavernous sinus. He lays special emphasis on deep seated pain behind and in the eye during ear infection and that this is indicative of infection in the tip of the pyramid.

If pain persists in one or all divisions of the fifth nerve we should not delay too long in doing a thorough mastoidectomy and in most cases no further surgery is necessary. If the pain persists with or without paralysis of the sixth nerve, in the presence of sepsis further exploration should be done. Eagleton puts emphasis on the presence of sepsis. What further exploration should be done? Kopezky says do a radical and follow up the lead. Eagleton ties off the common carotid artery and then does a radical and follows up the lead into the pyramid and elevates the dura in the middle fossa and examines same.

BIBLIOGRAPHY

(1) H. J. Profant, M. D.: Gradenigo's Syndrome, With a Consideration of "Petrositis." Arch. of Otolaryngology, Vol. 13, pp. 347. March, 1931.

(2) W. P. Eagleton, M.D.: Localized Bulbar Cisterna (Pontile) Meningitis, Facial Pain and Sixth Nerve Paralysis and Their Relation to Caries of the Petrous Apex. Arch. of Surg., Vol. 20, pp. 386, 420. March, 1930.

(3) Samuel J. Kopetzky, M.D., and Ralph Almour, M.D.: The Suppuration of the Petrous Pyramid; Pathology, Symptomatology and Surgical Treatment. Annals of O. R. & L., Vol. 39, pp. 996. Dec., 1930.

(4) I. Friesner, M.D., and J. G. Druss, M.D.: Osteitis of the Petrous Pyramid of the Temp. Bond Associated with Paralysis of Ext. Rectus. Arch. of Otolaryngology, Vol. 12, pp. 342. Sept., 1930.

(5) Philip E. Meltzer, M.D.: Gradenigo's Syndrome; Anatomic Aspects. Arch. of Otolaryngology. Vol. 13, pp. 87. Jan., 1931.

DISCUSSION

Eugene Orr, M.D. (Nashville): Mr. Chairman and Members of Section: Dr. Reaves has presented a subject on which many excellent papers have recently appeared. His paper certainly can also be so classed.

I feel that we are too prone, when in dealing with middle ear and mastoid disease, to think only of the mastoid process when we think of pneumatic cells. Pneumatic cells may extend, more or less, throughout the temporal bone, and in this connection let it be said that the x-ray is of extreme value, for extensive pneumatization of the mastoid process usually means pneumatization beyond the limits of the mastoid process. It is in this type that we expect the various ramification of cells.

So it is quite possible to have cellular temporal bone infection with serious intracranial complications without having what we are pleased to term operative mastoiditis

The fifth nerve, as Dr. Reeves has shown, is so closely hooked up with structures of the temporal bone that it is through its involvement that we get some of our most valuable diagnostic points, and in this connection there are just two points which I wish to stress, namely: tempero-parietal pain, as indicative of a meningeal irritation, and second, deep-seated eye pain as indicative of petrous cells abscess. Kopetzky, in a recent article, stresses deep seated eye pain plus low grade sepsis as indicating petrous cell abscess. In his article he differentiates it from babyrinthitis, reinfection of mastoid wound, et cetera. We have all, at one time or another, thought of this subject more or less seriously. We would think of Gradenigo's Syndrome and if the symptoms did not altogether fit in, the subject would be dismissed from our minds.

I was rather impressed with Profant's exhibit of temporal bones at the last section meeting of the American Medical Association. I came home, and at the first opportunity, dissected several temporal bones, and was struck with the possibilities which might arise as a result of the ramification of the cellular elements.

I recall two cases which I shall briefly relate.

1. A little girl, seven years of age, who had had a discharging ear since infancy, and who had had severe tempro-parietal pain for a few weeks, was brought to the hospital with a frank meningitis, high fever, delirium, et cetera.

Spinal fluid was turbid and under pressure. Why I operated on this patient I do not know. I was eleven years younger then, and was, perhaps, over influenced by the doctor who had kindly gathered up this waif and brought her in, in his own car.

An immediate operation was done. Operation consisted of the most extensive radical mastoid I have ever done, and, owing to the precarious condition of the child, the wound was dressed without any effort toward plastic surgery. A hopeless prognosis was given. The first laboratory report on spinal fluid was pneumococci. A later report was that the first report was in error, that it was streptococci. After a few stormy days, she made an uneventful reçovery.

Since being assigned to this subject, I telephoned the doctor who brought her down. She is well, and has never had any plastic done. I have not seen her since she left the hospital.

The second case, a man sixty years of age, who at the time first seen, had had a discharging ear for more than four weeks. This followed influenza. Tempro-parietal pain had been the most pronounced symptom, almost from the onset. There was a low grade septic temperature. There were no objective symptoms of operative mastoiditis. X-ray cloudy, but no breaking down. After an unjustified delay, an inadequate operation was done namely: simple mastoidectomy. There was no breaking down of the mastoid cells, yet there was a profuse discharge from the middle ear. In a few days after operation, meningitis developed and death ensued.

Looking back at this case in the light of present day knowledge, I feel that adequate surgery would have given him a fighting chance.

In conclusion, allow a word of caution. Let us ever be mindful that however desperate the condition may be, the operative procedure is extremely radical, and unless we are reasonably sure of our diagnosis, I most heartily agree with the essayist, that there may be wisdom in hesitation, but on the other hand if we are reasonably certain of our diagnosis, this is no place for procrastination.

MEMPHIS

APRIL 12, 13, 14, 1932

ANNUAL MEETING

TENNESSEE STATE

MEDICAL ASSOCIATION

SYPHILIS OF THE EIGHTH NERVE AND ITS BRANCHES*

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THIS subject has usually been discussed as a syphilitic neurolabyrinthitis, while one author has chosen to consider it as an involvement of two nerves, contending that the so-called cochlear and vestibular branches of the auditory nerve are in reality two distinct nerves with entirely different functions, arising at separate points, but both leading out of the cranial cavity by the same osseous canal or opening.

I was prompted to undertake a review of the subject because of one particular case in my own practice that led me to believe that I at least had been overlooking lues as the cause of deafness in some cases. Upon looking into the literature I found cause to believe that other otolaryngologists were also failing to recognize this condition. This seems to be due to a lack of interest in the matter, to carelessness in examination, or to an ignorance of its manifestations. Also there is a possibility that most of us have felt that it was essentially vain to hope for any benefit to or alleviation of the symptoms by treatment when once the condition had been recognized, and therefore have undertaken little treatment and have not reported our results.

As for myself, I think the chief fault has been incompleteness or carelessness in examination for in two and one-half years I saw approximately 5,000 patients and I do not recall having made the diagnosis of deafness of luetic origin, though a large number of these cases were known to be syphilitic, ranging in age from twelve or thirteen years to the seventh decade. If my work had been accurate this would seem to indicate the condition is indeed very rare.

On the other hand one author (Alice V. Mackenzie) says: "Syphilis, in one form or another, is the cause of deafness sufficiently often to warrant its consideration whenever a case of deafness presents itself for treatment; particularly when the functional hearing test findings point to a lesion in the perceptive apparatus." And George W. Mackenzie says: "Of all the infections, acute or chronic, syphilis is perhaps the most common cause of neurolabyrinthitis."

Perhaps we may find some solace and satisfaction in the probability that there is really less luctic deafness now than formerly because of the earlier recognition of the systemic infection and a checking of its progress by modern treatment before the eighth nerve or its branches are affected.

Deafness occurring in early syphilis may be considered as neurolabyrinthitis syphilitica because there is present a syphilitic involvement of one or both of the nerve trunks; the cochlear division is usually affected first. The process usually extends into the labyrinth and the end-organs if the case is untreated.

While deafness occurring in late syphilis, congenital or acquired, may be discussed as labyrinthitis syphilitica tarda, as the process is essentially in the labyrinth and occurs in the late stages of syphilis.

The pathology in real neurolabyrinthitis syphilitica is fairly well known because it occurs in cases that are affected with a virulent or malignant process and which frequently come to autopsy. Findings in these cases have shown the presence of the spirochete in the nerve trunks of the cochlear and vestibular branches, in the spiral ganglion, and in the end-organs; also in the temporal bone, in the marrow of the middle ear ossicles, and in the mucous membrane of the tympanum.

There is some dispute as to the location of the pathology causing the deafness in the late form of luetic deafness, or labyrinthitis syphilitica tarda. Details of the pathological processes in this form are very scant because the patients are not affected with a deadly condition and do not come to autopsy; consequently our ideas are largely conjectural, our deductions being based on clinical findings and functions as revealed by the various tests. Because of this rationale of determining the pathological processes there are naturally diverse views and opinions concerning it. The one idea most generally accepted is that there is a mild degree of luetic neuritis of the trunks of the nerve within the temporal bone as well as a more extensive involvement of the spiral ganglion and of the end-organs in the cochlea and the semi-circular canals. Certainly there are fibrous changes in the labyrinth and in the labyrinth capsule.

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*Read before the Eye, Ear, Nose and Throat Section, Tennessee State Medical Association, Knoxville, April 14-15, 1931.

And yet Jeans and Cooke report that in their examinations of the spinal fluid of patients with luetic deafness they have not found the evidences of neuritis such as are found in syphilitic affections of other cranial nerves. They, therefore, do not think that there is a real intracranial eighth nerve neuritis.

So we have at least two major conflicting opinions and we as yet remain confused. However, we do not have any actual postmortem findings recorded to disprove the theoretical pathology which we have deducted from clinical examination and observation.

Of course, we must remember that a syphilitic meningitis may involve the eighth nerve as it does others of the cranial nerves, and in some cases along with one or more of them. In this case we would expect to find other symptoms than those of eighth nerve disease alone.

The microscopical pathology in this condition is the same essentially as in lues elsewhere, the arterial changes, the cellular infiltration, and in some cases, the spirochetes themselves.

Symptoms: One of the earliest manifestations of syphilis of the eighth nerve is a diminution of bone conduction and an impairment of perception of the high forks. Jeans and Cooke report that shortened bone conduction was found in all of their cases in which the test was made. The patient hears the spoken voice well and is not aware of the impairment of hearing. It has been found to occur very early in the acquired form of syphilis and it might possibly occur equally as early in the late or congenital form if we only knew those cases had lues before they showed some other manifestations for which they consult a physician, not having recognized any deafness themselves. Oscar Beck has said that it is present in 80 per cent of all syphilitic patients.

The symptoms of neurolabyrinthitis syphilitica and of labyrinthitis syphilitica tarda are in many respects very similar, but I have chosen to consider them separately for the sake of clearness. I shall discuss the neurolabyrinthitis syphilitica, or deafness of early lues first.

It occurs in the active secondary stage in the acquired form of syphilis or in a virulent congenital infection, in which latter case one or both parents will be found to have been in the secondary stage of lues at the time of conception. The deafness is of the perceptive type with a diminished bone conduction and an impairment of air conduction of the high forks, though the diminution of the low bone conduction may be out of all proportion to the lowered air conduction. The deafness is characteristically bilateral though there may be evidences of it in one ear earlier than in the other. However, in untreated cases, it will sooner or later appear in the other ear and progress rapidly so that the difference between the two ears becomes less and less marked. Also, if untreated, the vestibular branch will sooner or later become involved with the appearance of symptoms of labyrinthine disease. If tested with the galvanic current it will be found that the conductivity of the nerve itself is reduced to a variable extent, even to a practical complete nonconductivity. The nystagmus that accompanies the labyrinth disease in this type is always a spontaneous one.

As for late luetic deafness, or labyrinthitis syphilitica tarda, it is also of the perceptive type and very similar to that of the other form, but is more sudden in onset and more rapid in its progress. It is also characteristically bilateral, though one ear may be involved a few days before the other. The pathology does not involve the nerve trunk to the extent that it does in the early form (and some say that it is not involved at all) and therefore the nerve responds normally to galvanic stimulation. Generally, the vestibular branch escapes and we do not have the vertigo, tinnitus, nystagmus, etc., that go with the labyrinthine disurbances of the other form. However, this is not always true, for in some cases the labyrinth may be extensively affected and its functions even entirely abolished. The nystagmus in this late form, when it does occur, is not spontaneous, but is brought out only upon stimulation of the labyrinth. If the affection should be unilateral when first seen the Weber test will be lateralized to the unaffected side and the Rinne will be strongly positive on the affected side.

It has been stated that deafness in congenital lues appears about the time of puberty, generally after rather than before. Jeans and Cooke report that they found it most frequently between ten and fourteen in their small series, the youngest being two years of age and females predominating. Ballinger says that late luetic deafness may appear gradually or suddenly and occurs most frequently between the ages seven and thirteen. One case has been reported in a woman forty-three years old.

Diagnosis: Of course, the deafness of early syphilis is usually easily recognized and properly diagnosed because it is accompanied by other typical manifestations of the disease. There is little difficulty here from the standpoint of diagnosis.

It is not always so easily or positively diagnosed in the late form, however, for otosclerosis, deafness due to focal infection with auditory neuritis, the various forms of labyrinthitis, bony tumors, drug poisoning, etc., must be excluded. Many of these can be ruled out more easily than can syphilis be cast aside, thus narrowing the field. A good history of the patient's past life as well as of his family must be carefully scrutinized. And it must not be forgotten that many a case of suppurative otitis media is of luetic origin or is complicated by it.

The onset of deafness as brought out before does not have to be sudden as many of us have been taught to believe. In some cases it is very gradual, then may appear to be stationary for a while, then suddenly become worse. Probably many of the cases of supposed sudden onset can be placed in this group, the patient never having been aware of the gradual impairment of hearing.

The patient may come complaining of vertigo, dizziness, headaches, impaired hearing, tinnitus or any grouping of these. Or he may come for treatment of nasal conditions, or eye involvement such as keratitis, and upon questioning him we may find evidences of auditory lues. An impairment of bone conduction, unilateral or bilateral should cause suspicion and calls for a careful testing of all functions of both branches of the eighth nerve. If the bone conduction is reduced on both sides it is even more demanding of careful and thorough study, for this may be the patient's very first manifestation of a systemic infection which for a long time was considered hopeless, but for which we now know much to do.

As mentioned above there may be other evidences of syphilis as notched teeth, gummatous growths, etc., to help us confirm our suspicions.

If our armamentarium permits we can with the use of the galvanic current determine very definitely whether we are dealing with neurolabyrinthitis syphilitica or labyrinthitis syphilitica tarda for this will reveal in the first case that the nerve trunk is at fault and in the latter that it is not.

In any doubtful case the Wassermann test should be run on both the blood and spinal fluid if necessary. And if any case, showing evidences of lues of the eighth nerve and its branches associated with other signs of syphilis, improves generally, and the process in the auditory mechanism is checked or improved by anti-luetic treatment, we are justified in making a diagnosis of syphilitic deafness regardless of what reactions the sera may show.

Treatment: In the treatment of neurolabyrinthitis syphilitica, or deafness of early syphilis, mercury, preferably by inunction, has given very favorable results in most cases, even in those of several months standing.

Late luetic deafness seems to respond best to treatment with arsphenamine if it follows a preliminary course of mercury and iodides. In the early days of arsphenamine it was thought that eighth nerve neuritis was either provoked or aggravated by its use, *i.e.*, deafness was produced or an existing impairment made worse following the use of and because of the arsphenamine. This criticism seemed in many cases justified. Since then we have come to believe that the fault lay not so much in the use of arsphenamine but in the preparation of it and in the small dosage given.

J. Brenario reviewed 14,000 cases of syphilis treated with arsphenamine and found 62 cases, or one in 226 of the 14,000, with auditory nerve lesions. Of these 62 cases 11 were accompanied by involvement of other cranial nerves. In the remaining 51 cases of auditory nerve disease, the cochlear branch alone was affected in 29 cases, the vestibular branch alone in five cases, and the two branches together in 17 cases.

The appearance of the nerve lesion following the arsphenamine injections seemed most likely to occur in the first four months. This aggravation of the nerve lesion was explained by Ehrlich on the following basis: The spirochetes in the nerve and about the labyrinth have become enclosed in a dense capsule and the vascular lumina have become narrowed by the syphilitic endarteritis; hence the arsenicals in the blood stream have poor access to the organisms. The general systemic infection has been attenuated by the treatment and the specific antibodies also diminished. These organisms, heretofore resisted by the host, and now protected by him, so to speak, take on a renewed activity. Hence Ehrlich advocated larger doses of arsphenamine which has been more carefully prepared. And that is just what we do now. The preliminary use of mercury and the iodides attacks the spirochetes more slowly and thereby renders them less likely to become so active upon the administration of the arsenicals. The arsphenamine should not be used in acute labyrinthitis or in acute exacerbation of subacute labyrinthitis, whether syphilitic or non-syphilitic.

Brenario reports ten cases of lesions of the auditory nerve following the use of mercury treatment. Of these ten, subsequently treated with arsphenamine, two were partially relieved, six completely relieved, and two were not benefitted.

In some cases of the late type the labyrinthine process seems to be unyielding to any treatment and must run its full course to destruction of the labyrinth.

However, we must remember that syphilis of the eighth nerve and its branches is a symptom of a systemic disease and the entire organism must be treated to save it from the ravages of the infection. With this in mind I think it wise to turn the patient over to a competent serologist for treatment, but the otologist should see him frequently for observation and recording of the progress or regression of the auditory symptoms. We should not hesitate to explain our ideas of treatment and request that as nearly as possible the treatment be carried out along the lines we think best. If signs of aggravation of the conditions appear, we should suspend the arsenical medication for a time.

Summary: 1. Syphilis of the eighth nerve occurs in two chief forms, neurolabyrinthitis syphilitica, or early auditory syphilis, and labyrinthitis syphilitica tarda, or late auditory syphilis.

2. Neurolabyrinthitis syphilitica responds very favorably to treatment in the majority of cases; labyrinthitis syphilitica tarda does not always respond as favorably in as many cases, but many of the cases are checked or stopped in their progress.

3. I believe that syphilis of the eighth nerve or its branches is more common than the diagnostic records of most otologists would indicate.

4. If diminished bone conduction is just grounds for suspicion of syphilis of the eighth nerve and its branches and if it is

an early manifestation of nervous system lues, then we as otologists should be more alert and watch for it more carefully.

5. Though we may not relieve all of the auditory symptoms we are obliged to recognize the systemic nature of the infection and cooperate with competent serologists in the treatment of it.

6. By the same token, the serologist and the general practitioner should remember the possibility of eighth nerve involvement and consult the otologist. And he should attempt to outline his treatment according to the degree of involvement as determined by the otologist.

DISCUSSION

ROBERT SULLIVAN, M.D. (Nashville): Besides the information we may get from the history in examining our patients, there are some rather definite clinical signs of syphilis of the eighth nerve, namely: (1) Shortened Bone Conduction; (2) Positive Rinne; (3) Air Conduction, low notes relatively normal, high note definitely lowered; (4) a bilateral affection. A definite and often marked shortened bone conduction is almost always present in the initial primary stage of lues, 90 per cent I believe is a fair estimate. Of course, this makes a proviso of no middle ear complications. By some authorities this is regarded as characteristic.

The amount of bone conduction lost varies greatly. Ranging from a few seconds to a complete loss.

Two theories have been advanced for the causation of lowered bone conduction. One by Oscar Beck, that it is due to increased cerebrospinal pressure. Willcutt and others believe it is due to a toxic irritation or degeneration of the acoustic nerve. A combination of these two theories may be nearer correct.

To discuss the symptoms of advancing syphilis of the eighth nerve. There may be a sudden manifestation of an acute auditory neuritis. When the cochlear branch alone is involved, and it is usually first to suffer, there is a severe, constant tinnitus, which is accompanied or soon followed by impairment of hearing, varying in degree.

If the invasion extends to the vestibular branch, which it usually does, these symptoms are very definite, as vertigo, dizziness, nausea, vomiting, and disturbed equilibrium.

Treatment: Whether salvarsan therapy may be provocative rather than preventive and curative of the condition occurring in the primary and secondary stages of syphilis is still far from being proven.

H. E. CHRISTENBERY, M.D.: The essayist is to be congratulated on giving us a paper on this much overlooked and neglected subject.

I am sure that he is correct in his observations, when he states that "otolaryngologists are failing to recognize syphilitic involvement of the eighth nerve and its branches," and that it seems to be due to a lack of interest in the case, to carelessness or to an ignorance of its manifestation.

Syphilis is no respector of persons or tissue, and it is our duty as physicians to go into each and every case as a matter of justice to our patients, as well as ourselves, and if possible reach a correct diagnosis before we attempt to treat the patient or tell them that their case is hopeless and nothing can be done. This is a wonderful place for the application of the Golden Rule.

A complete history, clinical findings, and good laboratory work, are most essential in making a correct diagnosis in many of our ear conditions. We, as specialists, suspect syphilis in many of our nose, throat and eye conditions, and do and have done the necessary work to make a correct diagnosis, why not use the same care in making a diagnosis of the cause of deafness?

After the diagnosis is made the treatment may be simple but not always gratifying. In the diagnosis of syphilis of the ear, preliminary tests may be carried out by the otologist even before the period at which a positive Wassermann may be expected. That is, after a month to six weeks following infection and previous to the appearance of general symptoms, an early diagnosis of syphilis can be arrived at in a majority of cases through careful functional tests of the ear.

A definite and often marked shortened bone conduction is almost always present in the initial primary stages of lues, not withstanding that air conduction remains practically normal, particularly for the lower tones provided there are no middle ear complications from other causes. This condition is often present in hereditary syphilis.

With shortened bone conduction, the air conduction remaining normal, we usually get a strong positive Rinne in the early stages of syphilis. Should an acute middle ear condition complicate, the previously lowered bone conduction may be elevated, but seldom to or beyond the "normal point." With the subsidence of the acute middle ear trouble, the bone conduction returns to its original low level. Beck contends that this condition is due to an increased cerebrospinal pressure. Wilcutt, Knick and others believe it is due to a toxic irritation or degeneration of the auditory nerve. A combination of these causes is, no doubt, the more plausible etiology of this condition.

Beck bases his theory on his observation that following lumbar puncture in syphilitic cases the shortened bone conduction tends immediately to resume the normal, but in a few days, with the return of the increased cerebrospinal pressure it is gradually lowered again. That the increased cerebrospinal pressure may be a factor in the etiology of the lowered bone conduction in many cases, particularly in the secondary stages, hardly admits of doubt. The plausibility of this contention is augmented by the familiar and easily demonstrated effects of the reduction of the bone conduction in normal ears in performing the Gelle test. In the latter instance, of course, the counter pressure comes from without and is exerted indirectly through the drum.

Willcutt questions the plausibility of Beck's theory on the ground of the short duration of many of these of very early syphilis in which reduced bone conduction is present, the diagnosis of which has been authenticated by the demonstration of the spirochete pallida from smears of the primary lesion and a positive history of infection. The argument is advanced that a syphilitic meningitis has not time to develop to a sufficient extent to produce a cerebrospinal pressure adequate to materially lower the bone conduction. And when we consider that shortened bone conduction is an initial and almost constant symptom of lues, occurring as early as the eighth day, we are inclined to the opinion of Willcutt and others in the toxic theory. The bases of the latter theory in causing early shortening of bone conductions is that the toxins and endotoxins of the spirochete circulating in the blood effect primarily the most sensitive tissues, the brain, meninges, cranial nerves, etc., which accounts for the early lesion of the auditory, the meningeal headaches and other "increased nerve reflexes," which frequently occur in the initial primary stages of syphilis.

However, in the advancing stages of syphilis the focal aural lesions may become suddenly augmented as evidenced by more or less intense and abrupt manifestations of an acute auditory neuritis. When the cochlear branch alone is involved, and it is usually the first to suffer, there is a severe constant tinnitus which is accompanied or soon followed by impairment of hearing varying in degree, from time to time, from slight to total deafness. If the invasion extends to the vestibular branch, which it usually does after a brief interval, the above acoustic disturbances are supplemented by even more distressing statis disturbances, as vertigo, dizziness, nausea, vomiting, disturbed equilibrium, great prostration, etc.

The vestibular branch reactions are of the labyrinth type, and are equally or more vacillating than the acoustic, and their great variations probably may be explained by the same mechanism. The turning reaction is usually the first to go, the caloric following. However, the one may be present and the other absent.

Treatment: When properly given salvarsan acts as a specific in the active immunization and cure of syphilis. If focal reactions occur in the auditory, facial or other cranial nerves during the course of salvarsan therapy, the dose has been too small or not repeated often enough and continued sufficiently long to completely destroy all of the spirochete pallida, particularly those in avascular foci—as nerve tissue, or in other foci or recesses difficult of access—as the cerebrospinal fluid.

As mentioned by the essayist mercury by inunction is a very satisfactory form and way of medication. Our time honored mixed treatment works most happily in some of these cases. In the treatment with arsphenamine, much depends upon the quality of the drug, time, dosage and administration.

SOME BEHAVIORISM CONSIDERATIONS OF CHILDHOOD*

WILLIAM EDGAR VAN ORDER, M.D., Chattanooga

THE subject called behaviorism seems more psychological or psychiatrical in nature than strictly pediatric or medical. For this reason such consideration may be apparently out of place with a medical group. Few of us realize, however, the close association that should exist with medicine, and the many benefits drived from exercising these in combination. The practice of medicine is not limited to treatment materially alone, but involves psychological tactics. R. L. Wilbur, Secretary of the Interior, has stated that the great doctor must know as much about the subtle art of counselling as does the priest. No truer words were ever spoken.

In as much as the children of today are to constitute the adult populace of tomorrow it behooves those of us who are enabled to guide the physical and the mental constructiveness of youth. Roosevelt in his administration realized the need of preparation for the future and recommended propagation of large families; Wilson in his by affording protection to the working child; and Hoover by advocating attention to the preschool child. This attention was not selected at random—"The White House Conference on Child Health and Protection" met in Washington in February, 1931. The concensus of opinions of physicians, psychologists, psychiatrists, nurses, social service leaders, and heads of juvenile institutions who had studied the problem for months was that the preschool child was being neglected. This age—from two to six—seems to be that in which habits and personality are largely formative. To the mental status, therefore, must be given more attention. One realizes that the highest compliment that can be given is to say that a man has good common sense, or to say that the people of a nation are sane and stable. Human behavior in the mass determines our successes or failures as a nation. The foundation of desirable behavior and the development of common sense begins early in life. President Hoover, as the head of this nation, therefore, seems to have made no error.

Mental growth of the infant must be considered in conjunction with the physical. Much less is known of the former. Unlike physical growth, which can be measured by comparative observation of changes in dimension, bulk and form, mental development must be measured by observation of the emergence of new patterns of behavior reaction in relation to age, physiological and anthropological factors. Behavior development proceeds at a sufficient rate before birth so that even the infant born eight weeks prematurely has a fair chance of survival, and it continues at such a rate during the postnatal period that weekly and even daily increments of behavior may be observed. This development proceeds by successive stages, which merge with each other almost imperceptibly, and yet are sufficiently distinct to enable us to observe that during approximately the first forty weeks of postnatal life a high degree of organization of the patterns of perception, prehension, and manipulation takes place; that during later infancy, up to two years, locomotion and language development is prominent; and that the period of early childhood, from two to six years, is marked by fundamental acquisitions in every field of behavior—motor, language, adaptive, and personal social.

The study of behavior, therefore, becomes of special importance in the management of the preschool child, or to preventative and supervisory pediatrics. Indeed, the pediatrician may be said to have a vested interest in infant behavior, for development, quite as much as disease, falls within the theory and practice of his profession. The whole tendency of modern science is toward concepts which stress and preserve the unity of the individual; and if pediatrics continues its present position as a regional specialty converging the resources of general medicine and biology upon infancy, it can scarcely avoid a fundamental reckoning with the problems of behavior. It therefore becomes the pediatrician to offer this explanation to the psychologist and psychiatrist for apparently grazing on their side of the fence.

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*Read before the Chattanooga and Hamilton County Medical Society, Chattanooga, October 5, 1931.

Different phases of behaviorism herein considered will be of mental growth in a body physically normal and not in respect to the various types of anatomical construction. Behaviorism generally is extremely expensive in its scope. In its consideration practically I wish to mention such fields as seem most commonly presented for mother's concern. In a brief sequence I will mention character, eating, sleeping, elimination, and fear as being the most important.

Character is the first consideration here to be given attention. It may be regarded as the sum total of all the patterns of behavior manifested by the individual. The repeated reactions to manifested instincts go to make up habits and personality. These repeated reactions are determined by environment, which designates environment as a very important factor. The parent supplies the early environment and is responsible for the training which determines the fundamentals projecting themselves into the child's later life. The general physician, by virtue of his relationship to the family, should advise the parents. The physician does not usually avail himself of the opportunity to do this service. The physical side only is considered and the poor mother goes groping on. It seems highly appropriate to issue a challenge to the general practitioner to consider this information so vital as to require expert advice, advice by psychiatrists or pediatricians who make a study of dealing with such problems. One should find it very simple to advise a parent how desirable traits may be developed. The child should receive consistent constructive advice from the parents—and be allowed the repetition of the desirable traits in a pleasant environment. Suppose a child is making too much noise before bedtime. Is it apropos that the father should blast forth with a "shut-up-and-go-to-bed"? A child usually reflects the character and personality of the person chief in attendance during its early years. Herein lies the importance of a parental education. A colored "mammy" no longer has the right to care for a child by herself. Patience and perseverance together with a sympathetic understanding of the mother's instincts as well as child psychology must be possessed by the physician, or informant.

Eating is the biggest bugaboo. It's usually "My child won't eat", from one year up. If this complaint is studied from the psychological viewpoint—after any physical disturbances have been ruled out—we find fundamentally the instinct called ego as being the basic cause. Every individual wants to have the attention or interest of others. It is a primal necessity for all normal human beings. The child very soon learns that by asserting itself in a series of loud "wahs" that the mother or nurse will gladly give it attention to keep it quiet. Having learned this quality of dictatorship in early infancy, the child of the preschool age continues to sense the anxiousness of the parents about feeding, and utilizes this knowledge in extracting promises of some pleasure or desirable rewards if food will be taken. A wonderful weapon is this. He will eat nothing without getting his price for doing it.

Mothers are usually over-anxious about the feeding of their children. Naturally it is the major part of their maternal instinct—in all grades of animal life the mother will endure hardship and death, if need be, to secure food for her young. Doctors, nurses, teachers, and others interested in child welfare have talked too much about malnutrition. The poor mother belives that foods must be given by some means, if not voluntarily taken, or else the child will be too thin—and hence the determination that she will feed him or bust in the effort. And the child is pleased with attention the effort creates. Then again mothers are harassed by the so-called standard height and weight chart. Teachers and nurses tell parents their children are so many pounds under weight—never realizing that undersized parents usually propagate small children, and that some nationalities are naturally much different in build than others.

The parents' duty in handling children is:

1. That child be provided with regular meals.

2. That meals be of good quality.

3. That child shall come to the table with clean hands, so he may handle his own food (table manners should not receive too much attention—the child will eventually copy the manners he sees, not the ones he hears about).

4. That he remain at the table a definite length of time.

5. And last, but most important, that food must be served without one word being said about food (there is a vast difference in saying "you remain there" and "you must eat.")

Concerning children just learning to eat the most significant thing is that the infant has the sole attention of the person who is feeding him. If the parent does *not insist* firmly that the baby pay attention to eating, he may make a play of his meal and prolong it unnecessarily. The cooing and the babbling of the baby and the spitting out of his food and the grimacing sometimes appeal to the young mother, who responds by laughing, and the baby thinks the whole thing is a sort of game. Then the interval of feeding must be regular. If asleep the infant should always be awakened at day for nature tends to bring on sleep again following the contentment of a full stomach. So many mothers allow their babies to dictate when food shall be given. A child does not want food every time it howls. One of the best methods for disciplining a child is to have it on a well ordered routine of care and feeding. The child can learn to feed himself at quite an early age, the average child about eighteen months. In a month to six weeks time thereafter it should become fairly proficient in getting all of its food to its mouth with a spoon. At twenty to twenty-two months one can begin to replace the spoon with a blunt fork. A bottle fed baby can easily be weaned at ten to twelve months. It can be taught to drink directly from a cup. It should begin to drink without assistance about the eighteenth month. Hunger will do wonders; patience for a few days or weeks will do the rest. On this early arrangement naturally depends the success of feeding later in life.

Thom states that in the development of proper habits of eating, nothing is more important than the state of mind of the child at meal times. Every effort should be made to have him calm and cheerful, and if possible, free from immediate demands on his time for other purposes. This necessitates giving a youngster an advance warning so that he can finish the task at hand and have a few minutes of rest before he comes to the table. It is to be expected that the child who is called from some interesting occupation or play will not be as much concerned about eating as he would be if that were his sole duty for the moment. Until desirable habits of eating are well established it is best that the child eat alone where, without an interested audience, he may learn to eat alone and the spilling and slopping of food will do no harm.

The next behavioristic item considered is that pertaining to habits of sleeping. Here again begins our problem at a very early age. Early in infancy the child sleeps sixteen to twenty hours, at one year about fifteen, and at two, twelve to fourteen. He may be awakened with difficulty and usually goes back to sleep very soon if healthy. Infants should be awakened for feeding at regular schedule, and should be allowed to sleep at times other than when scheduled care necessitates interruption. Routine, then, is as important in the management of sleeping problems as in regulation of eating habits.

Mothers come with the complaint that their children will not go to sleep at night. We may often see why more clearly in the presentation of this analogy. How many of us can go to a picture show where emotional scenes are displayed, or go to a party where everyone is excited and having a good time, and come home and go to sleep in a few minutes? Our nerves are at a "high tension" so to speak, and it requires some time to relax before sleep comes on. So, too, does a baby find sleep difficult if it is tossed about or played with vigorously before bed time. A common occurrence is this. The father usually leaves for work before the kids are up. He gets home just before their meal and bedtime. He loves the children and wants to play with them—and a nervous instability is created. A cessation of this practice will soon reveal the advent of sleep at the normal time.

The following is true also. In imitation of their parents children attend parties, theatres, and movies at night. Apparently their parents do not realize that they themselves lay the seed for these adult tastes of their children. Think of the small children and even babies in arms whom one sees in the audience at evening performances. Think of the countless nurslings and children who, half asleep, are jostled about at night in automobiles. Once the pernicious habit of keeping late hours has taken root, it can be broken only with great difficulty.

Some children will not nap during midday. The habit is desirable in children of the run about age particularly. In attempt to develop it the child is brought in from play, fed, and told that it must go to bed for an hour and a half. Frequently the child takes a toy or a doll with him—and attention is diverted from the real purpose. Often the child calls out every ten or fifteen minutes to see if the time is up yet, or asks for a drink. The whole is to get attention from some outside source. Unless the mother emphasizes the purpose of the occasion, practices regularity, and does not weaken in her manifestations of sternness in maintaining solitude and silence the child will not think about the main objective. The healthy child should go to sleep within twenty or thirty minutes after going to bed, and should get up immediately after awakening. Frequently we find the preschool child who will not go to sleep at night without the presence of a parent story telling, rocking, holding the hand, or some other attention. The parent makes the mistake of catering to the child's likes or dislikes on such occasions when the child's feelings are not up to par. Subsequently the child calls for the same procedure and, when refused, presents the truth that "you did it last night, why can't you tonight?" My advice to the parent is not to start something you can't finish.

Habits of elimination are important to control at an early age. The marked variations in the ages at which the child is trained are due to differences in the constitutional make-up of the individual and in the influences surrounding him. Control is established at ages varying from nine months to adult life—the desirable time being one year. To more clearly illuminate the mechanism involved in these procedures, knowledge of the nervous control is necessary. The involuntary nervous system (that over which there is no conscious control) controls the digestive tract below the throat. It is divided into the motor part—which speeds up the muscular activity, and the inhibitory part—which slows these movements. Normally these factors neutralize each other. An individual possessing an unstable involuntary nervous system (which may be caused by general constitutional afflictions) may have an irregular eliminating process. A part of the act of defecation is a stimulus from the rectum to the brain causing an urge to empty the bowel. This follows a stretching of the bowel, and naturally depends on large enough amount of stool to cause this reaction. Mothers training children have variable degrees of difficulty—usually depending on the degree of hyperactivity of the nervous system. The mother of an infant having infrequent but normal stools may find training for two or three weeks sufficient to establish control.

Control of defecation usually starts after the youngster can sit unsupported, and when the infant is old enough to recognize the stimulus of desire. One learns the usual time of elimination and attempts to have the act accomplished over a suitable vessel. Frequently at the beginning it is necessary to create the desire by means of a suppository. This should establish an association between purpose and effort after several weeks training. If unsatisfactory results are obtained after three or four weeks, the mother should discontinue for a week. The same as to time should be followed for urination control after the establishment of management for defecation.

Lapses frequently occur during the early preschool age. These may be brought about because of some recent illness or during periods of emotional excitement. A punctual routine is essential for thoroughness in defecation. After breakfast the peristalsis created by the intake of food helps the emptying process, if given an opportunity. There should be no excuses ever accepted for failure to make an effort. Undue parental anxiety frequently conveys to the child a state of unnecessary nervousness inhibitory in nature. A positive stand should be taken by the parent that a certain time must be spent, or until results are obtained —never longer than ten minutes because of possibly causing child to be irritated. Toys, books, or anything to divert the child's attention must be taboo. And the parent must later stress the importance of prompt response to the stimulus at any other time. Prolongation tends gradually to eliminate the desire. As for bed wetting, control may be brought about by correct methods of training. Assuming that physical factors have been eliminated, it is essential to investigate the emotional life. The loss of a pet, the moving away of a playmate, the strangeness of a new home are often found associated with such lapses. Not uncommonly one finds loss of control of night urination shortly after the arrival of a new baby in the home. The mechanism is an unconscious one and is probably associated with jealousy of the new arrival and hostility to the parents. Punishing a child because of this will make it only more emotionally upset. The situation calls for more attention and demonstrations of affection.

Among the emotions which most profoundly affect human behavior, fear is perhaps the most outstanding. It is generally conceded to be present at birth, though specific fears which develop at a later period are variously interpreted as innate though subject to maturation or as acquired through life experiences of the individual. Those present at birth are noticed shortly thereafter in the nursery with the infant's first shrinking or avoidance—timidity, so to speak. The shudder, restless jerking, awakening with a start, sudden shrinking at unusual sights and sounds, or when handled by strangers are different manifestations.

Any consideration of fear must take into account its origin, development, manifestation, and effects. The emphasis and relative importance of these factors differ naturally in relation to each specific school of psychology, quite apart from and in addition to the ever important controversy of the relative weight of heredity and environment. No specific school is herein recommended. The introspectionists (old school) spoke of fear as an instinct present at birth. Later, Titchener, who for many years was dean of American psychology, accepted fear as an instinctive emotional reaction, the character of which depends upon bodily change, and whether the fear is fulfilled or unfulfilled. Watson, of another school, recognizes specific fears observable at birth, but will not of course countenance the term instinct. He relates them to the anatomical structure of the child. The fact that a reaction is not present at birth does not necessarily mean that it can not be innate. Development takes place as a function of growth and it is believed by many psychologists that certain fears develop in this way and are natural to the human race even though they cannot be observed in the earliest days of life. The psychoanalytic school recognizes fear symptoms at birth and relates them definitely to the actual birth experience of the child. The degree of anxiety, of tension, and of stability bear some relation to the degree of struggle which the child has undergone in being born. Freud is of this school. We might compare the physical reactions of a child born by an uncomplicated Caesarian section and one born of a primipara with a prolonged labor to illustrate this. There is a distinct differences in responses to sensitizations to new situations, such as handling, bathing, clothes changing, and all the other experiences that come to the child within its first few weeks and months. The placid and more easy going baby is the one who has had the easiest time in coming into the world. This is readily observable in viewing children en masse, but naturally is not of sufficient import to ever suggest such drastic procedures as Caesarians to alleviate such possibilities.

The greatest practical consideration of fear is called "condition" fear, or what I would call "resultant" fear. This is naturally a resultant of some condition causing fear. To demonstrate: Jimmie is given a blue rattle to hold, and shortly after is treated to a spoonful of weak vinegar solution. After several experiences of this sort, Jimmie begins to manifest a dislike for blue rattles. Johnnie steps on the dog's tail, the dog jumps and barks, and Johnnie subsequently is afraid of dogs. The conclusion from these two experiments would suggest a fear of pain (in form of bad taste of vinegar) and fear of noise (from bark of dog), and not being able to distinguish the causitive factor, develops a dislike or fear of any associated condition which might have a bearing on the subject of pain or loud noise. If a disagreeable association is made etiologically, one should assume that an opposite reaction might result from an agreeable contact. This is called unconditioning the fear. For example, Johnnie had the fear of dogs. The association of a pleasant experience is now to be made with a dog. What could be more pleasant to any child than eating? While occupied at this pleasantry, a dog is ushered in for only a few minutes. At another meal, the dog is brought closer—and very soon the small dog could even sit in the child's lap, for all the fear created.

A consideration of this type of fear suggests three practical means of handling:

In the first place, we can prevent certain kinds of fears by preparing the child so that unexpected stimulus will have less potency to disturb him. The barking of a dog is less terrifying to a child who has had this barking propensity explained. There are many ways in which a child's experience of unexpected or strange can be anticipated with explanations and assurances. On a few occasions, especially in young children, physical contact with the mother may be necessary during the earlier stages of treatment. For example, the first sight of a stranger is more readily endured if the youngster can cling to his mother's hand. Later, of course, the child must learn to meet strangers "on his own."

Second, we can forestall fears by familiarizing a child with certain conditions while he is too young to be disturbed by them. The baby who is habituated to sleeping in the dark is not likely to develop a fear in this situation. An animal playmate in early life increases a child's tolerance of strange animals. A suitable degree of caution in this situation can be taught later more easily than a fear can be removed.

Third, when fears have been developed in spite of our care, they can usually be removed by associating the feared object with another object which is the stimulus and a stronger stimulus—for a desirable response.

Closely allied to condition fears is that type called anxiety. Here we have the resultant of an undesirable experience or environment which has created a state of fear of potentialities—or a state of insecurity. This is not frequently in the preschool child, but is a growth of circumstances beginning at this period. An example comes to mind in the personality of an acquaintance. The infant's home life of this individual was interrupted by the death of the mother. A stepmother with inferior materialistic instincts took charge. She was nervous and hard to please. The father's attention was diverted to a stepbrother, with positive assertions rarely expressed in favor of the daughter's right. The daughter naturally developed a state of anxiety, or uncertainty as to her place in the family constellation. During one's early years such circumstances are likely to have a deleterious effect on one's personality later in life unless treated early. The above cited case may be continued to suggest proper treatment. Stabilization of the child in the home would be the first choice—recognition, noncritical attitude, and an opportunity to build oneself up in the affections of the parents. But in this case, since personalities of the parents were too unflexible to permit these advantages, a feeling that the child belonged somewhere was created by school interests, association with groups of children of the same sex, and by memberships in clubs—all resulting in the accumulation of lifelong friendships. Improperly treated, one would find an inferiority complex, a moroseful, saddened personality with a definite emotional instability.

The treatment of fear generally does not requite direct therapy. One needs to look for the latent disturbance to which the fear is calling attention. When this more serious cause of fear is successfully treated, the fear itself will disappear. Management may be from without by the mother's guidance and suggestion, and from within by the child himself—both toward the end of developing fortitude. As to prevention, the following rules are suggested by Arnold Gesell:

"Do not plant seeds of unwholesome fear by false alarms, by undue worries, by expressions of anxiety, by exaggerated threats, or by imaginary bogies.

"Keep the child, whenever possible, away from unnecessary and artificial fears. Do not let them go to movies which are absurdly terrifying or false to life. In the same spirit, guide his reading.

"Keep the child's body fit. It makes for mental as well as physical resistance.

"Nourish the child's trustfulness in life. This trust will come chiefly by mental contagion and by subtle suggestion. Do not let him entertain suspicions, doubtings, and unsatisfied curiosity."

And as to existing fears, he makes the following suggestions:

"First of all respect the child's fear, whatever it may be, even if it seems to you altogether imaginary. It has a basic cause and is a reality to the child.

"Do not try to laugh it out of court by derision or shame. A sense of humor helps to turn the trick; but the best humor always has a quality of sympathy.

"Do not try to scare him out of his fear by scolding or by false threat. This would simply be replacing one fear with another.

"Do not, on the other hand, try to cajole it out by an equally false bribe or absurd reward. Remember that the problem is one of character formation and not one of discipline, and that the problem will be solved only if the child requires counteracting fortitude or familiarizing experience.

"Get at the basis of the fear through questioning conversation with the child, rather than through argument to him.

"Do not attempt to destroy the fear altogether. (This is a common mistake.) Rationalize the fear, moderate it, temper it. Grant the child the privilege of fearing, but direct the fear and temper its intensity.

"And once again, do not shame him for cowardice, but praise him for every bit of fortitude that he shows. Commendation will build up self confidence, whereas condemnation can undermine it. And self reliance is the very defense you wish to build up.

"What is the hygiene of fear? All fears and forms of fearing which promote the wholesome growth of the personality are healthy; all fears and forms of fearing which warp or inhibit the growth of personality are unhealthy. Fortitude is one of the sterner graces of the soul; but there is none that is more important for the art of everyday living, and none which intelligent parents can more readily impart."

In conclusion I wish to state that the management of these problems calls for a great deal of tact. The mother really is the chauffeur and any erring from the way is usually her fault. She need not be made aware of this fact, and yet may have changes instituted which she might think to be of her own origination. One's greatest difficulty is to get the parent to realize the need of council for these mental infringements. To this end I cordially invite the general physician to lend an arm, and to chuck aside the worn out adage that "she'll outgrow that, Mrs. Smith."

BIBLIOGRAPHY

Child Study Association of America.

The Guidance of Mental Growth in Infant and Child. Gesell.

The Psychology of Childhood. Swift.

White House Conference, 1931.

American Journal of Diseases of Children, Vol. 96, No. 13.

Pediatrics (Abt) 1930 Series.

A. M. A. Journal, August 15, 1931.

Archives of Pediatrics, Vol. 47, No. 9.

The Behavior of Young Children. Waring and Wilker.

PROPOSED AMENDMENTS TO WORLD WAR VETERAN'S ACT, TOGETHER WITH PARTS OF ACT AFFECTED BY AMENDMENT

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This pamphlet contains the following:

(a) Paragraph 202-10 of the World War Veterans' Act with explanatory note.

(b) A tentative draft of the proposed amendment which embodies the provisions of the Shoulders Resolution.

(c) The amendment to the World War Veterans' Act as of July 3, 1930.

(d) A copy of a communication from the Acting Director of the Veterans' Bureau to Honorable Joseph W. Byrns, Congressman from the Hermitage District, Chairman of the Appropriation Committee of the House.

From a study of these one can obtain a definite idea of the language in the World War Veterans' Act to be repealed and the language that is to take the place of the part repealed.

SECTION 202 (10), WORLD WAR VETERANS ACT, AS AMENDED TO JULY 3, 1930

"(10) That all hospital facilities under the control and jurisdiction of the bureau shall be available for every honorably discharged veteran of the Spanish-American War, the Philippine insurrection, the Boxer rebellion, or the World War, suffering from neuropsychiatric or tubercular ailments and diseases, paralysis agitans, encephalitis lethargica, or amebic dysentery, or the loss of sight of both eyes, regardless whether such ailments or diseases are due to military service or otherwise, including traveling expenses as granted to those receiving compensation and hospitalization under this Act.

"THE DIRECTOR IS FURTHER AUTHORIZED, SO FAR AS HE SHALL FIND THAT EXISTING GOVERNMENT FACILITIES PERMIT, TO FURNISH HOSPITALIZATION AND NECESSARY TRAVELING EXPENSES INCIDENT TO HOSPITALIZATION OF VETERANS OF ANY WAR, MILITARY OCCUPATION, OR MILITARY EXPEDITION, INCLUDING THOSE WOMEN WHO SERVED AS ARMY NURSES UNDER CONTRACTS BETWEEN APRIL 21, 1898, AND FEBRUARY 2, 1901, INCLUDING SURGEONS WHO SERVED OVERSEAS UNDER CONTRACT DURING SPANISH-AMERICAN WAR, NOT DISHONORABLY DISCHARGED, WITHOUT REGARD TO THE NATURE OR ORIGIN OF THEIR DISABILITIES.

Language to be Stricken Out by the Amendment

"*Provided,* That any and all laws applicable to women who belonged to the Nurse Corps of the Army after February 2, 1901, shall apply equally to members of the Army Nurse Corps who served under contract between April 21, 1898, and February 2, 1901, including all women who served honorably as nurses, chief nurses, or superintendent of said corps in said period; *Provided,* that preference to admission to any Government hospital for hospitalization under the provisions of this sub-division shall be given to those veterans who are financially unable to pay for hospitalization and their necessary traveling expenses: *Provided, further,* That where a veteran hospitalized under the authority of this subdivision is financially unable to supply himself with clothing, he shall also be furnished with such clothing as the director may deem necessary: *Provided, further,* That where a veteran entitled to hospitalization under this subdivision is suffering with a disease or injury necessitating the wearing of a prosthetic appliance and is financially unable to supply himself with same, upon affidavit to that effect the director is hereby authorized to furnish such appliance and to effect necessary repairs to the same without cost to the veteran: and *provided further,* That the pension of a veteran entitled to hospitalization under this subdivision shall not be subject to deduction, while such veteran is hospitalized in any Government hospital, for board, maintenance, or any other purpose incident to hospitalization: *Provided further,* That the Act of May 4, 1898, entitled "An Act making appropriations for the naval service for the fiscal year ending June 20, 1899, and for other purposes,' the Act of February 28, 1861, as amended by the Act of February 2, 1909, relative to the Government Hospital for the Insane in the District of Columbia, or any other Act, in so far as they are inconsistent with the provisions of this section be, and they are, hereby modified accordingly.

"In the insular possessions or Territories of the United States the director is further authorized to furnish hospitalization in other than Government hospitals."

The most recent amendment of Section 202 (10) is that of July 3, 1930, which added the following new paragraph:

"For the purposes of this section the Spanish-American War shall be construed to mean service between April 21, 1898, and July 4, 1902, and the term 'veteran' shall be deemed to include those persons retired or otherwise not dishonorably separated from the active list of the Army or Navy."

NON-SERVICE-CONNECTED DISABILITY BENEFITS

Tentative Draft of Proposed Act for Direct Cash and Hospital Benefits to Veterans With Total Disability of Non-Service-Connected Origin, in Lieu of Government Hospitalization.

AN ACT TO AMEND THE WORLD WAR VETERANS' ACT, 1924

Be it Enacted by the Senate and House of Representatives of the United States of America in Congress Assembled:

Section 1. That Paragraph 10 of Section 202 of the World War Veterans' Act, 1924, approved June 7, 1924, as amended by Acts approved March 4, 1925, July 2, 1926, and July 3, 1930, is hereby amended by striking therefrom the following: "The director is further authorized, so far as he shall find that existing Government facilities permit, to furnish hospitalization and necessary traveling expenses incident to hospitalization to veterans of any war, military occupation, or military expedition, including those women who served as Army nurses under contracts between April 21, 1898, and February 2, 1901, and including persons who served overseas as contract surgeons of the Army at any time during the Spanish-American War, not dishonorably discharged, without regard to the nature or origin of their disabilities."

Section 2. The World War Veterans' Act, 1924, is further amended by adding thereto the following:

(1) Each honorably discharged veteran of any war, military expedition, or military occupation with ninety days or more of actual service, shall be entitled to the following disability benefits for disabilities not resulting from injury or disease suffered or contracted in military or navy service:

A. A cash benefit of $12.50 per week during any period of total disability from disease or injury.

B. A hospital benefit of $4 per day during any period of actual and necessary hospitalization.

(2) Such benefits shall be payable to the veteran upon satisfactory proof of the disability, furnished by the veteran to the Veterans' Bureau, upon forms and in accord with rules to be prescribed by the Director of the Veterans' Bureau; each such proof to include the supporting statement of an attending physician of good standing and repute, and, in the case of hospital benefit, the certificate of the superintendent or person in charge showing actual confinement in a hospital approved by the Director for service to veterans;

(3) *Provided,* no cash benefit shall be payable under this section to a veteran for any condition for which he is paid disability allowance for total permanent disabili-

ty under the amendment to the World War Veterans' Act of July 3, 1930; and no benefits under this section shall be paid to any veteran for any disability resulting from his own wilful misconduct; nor for any disability for which the veteran is entitled to hospitalization under paragraph 10 of section 202 of the World War Veterans' Act, as amended by this Act, in a hospital under the control of the Veterans' Bureau.

(4) Whenever malingering or fraudulent collusion on the part of an attending physician is suspected by the Director, any veteran claiming benefits under this section may be ordered by the Bureau to a Veterans' Bureau or to a veterans' hospital for examination, observation and report as to the existence of a condition entitling him to the benefits claimed, pending compliance with which order payment of benefits shall be suspended; and in all cases hospital records of the claimant shall be open to the inspection of the Bureau, and the claimant shall be subject to examination under the provisions of section 203 of the World War Veterans' Act, 1924, as amended.

(5) The Director of the Veterans' Bureau shall furnish to each living veteran who may be entitled to benefits under this section a "Disability Benefit Certificate," reciting the benefits provided herein and the terms and conditions under which they may be paid and received, together with a blank form on which application and proof for such benefits may be made. The Director shall enforce the provisions of this section through and as a department of the Division of War Risk Insurance of the Veterans' Bureau.

Section 3. The provisions of Section 1 hereof shall take effect six months from the date of this enactment; and the benefits provided in Section 2 shall accrue and commence six months from the date of enactment.

AMENDMENT OF JULY 3, 1930, TO WORLD WAR VETERANS' ACT, 1924, SECTION 200

On and after July 3, 1930, any honorably discharged ex-service man (who entered the service prior to November 11, 1918, and served ninety days or more during the World War), and who is or may hereafter be suffering from a 25 per centum or more permanent disability, as defined by the director, not the result of his own willful misconduct, which was not acquired in the service during the World War, or for which compensation is not payable, shall be entitled to receive a disability allowance at the following rate: 25 per centum permanent disability, $12 per month; 50 per centum permanent disability, $18 per month; 75 per centum permanent disability, $24 per month; total permanent disability, $40 per month. No disability allowance payable under this paragraph shall commence prior to July 3, 1930, or the date of application therefor, and such application shall be in such form as the director may prescribe; *Provided,* That no disability allowance under this paragraph shall be payable to any person not entitled to exemption from the payment of a Federal income tax for the year preceding the filing of application for such disability allowance under this paragraph. In any case in which the amount of compensation hereafter payable to any person for permanent disability under the provisions of this chapter is less than the maximum amount of the disability allowance payable for a corresponding degree of disability under the provisions of this paragraph, then such person may receive such disability allowance in lieu of compensation. Nothing in this paragraph shall be construed to allow the payment to any person of both a disability allowance and compensation during the same period; and all payments made to any person for a period covered by a new or increased award of disability allowance or compensation shall be deducted from the amount payable under such new or increased award. As used in Parts I and V of this chapter the term "compensation" shall be deemed to include the term "disability allowance" as used in this paragraph.

Honorable Joseph W. Byrns,
Member of Congress,
Nashville, Tennessee.

My Dear Mr. Byrns:

In reply to your communication of May

9, 1931, transmitting a request for information from the Tennessee State Medical Association, you are advised as follows:

1. As of March 31, 1931, there were 53 Veterans' Bureau Hospitals in operation, having a standard bed capacity of 25,920.

2. Approximately 67 per cent of the admissions to veterans' hospitals are for non-service connected disabilities. However, only 47 per cent of the patients remaining in these hospitals March 31, 1931, were hospitalized for non-service connected disabilities.

3. The Congress of the United States since March 3, 1919, has authorized the appropriation of the sum of $110,477,000 for new construction for veterans' hospitals, and of this amount $97,450,000 has actually been appropriated.

4. During the last session of Congress, $16,350,000 was appropriated for additional hospital and domiciliary facilities and services.

5. The per diem cost per patient for operating general hospitals under the Veterans' Bureau during the fiscal year 1930 was $4.42.

6. The average cost of construction per bed is approximately $3,500. The average annual cost of professional staff per bed is approximately $151.56.

*7. The Medical Council of the Veterans' Bureau has estimated that the maximum number of beds needed would be 129,859, on the assumption that veterans of all wars are given a mandatory right to hospitalization.

8. The average cost of transporting a veteran to and from the hospital is approximately $30.58.

Very truly yours,

JOHN D. CUTTER,
Acting Director.

CONCLUSIONS

1. It would not effect cash or hospital benefits for service connected disabilities.

2. It would not effect hospital benefits for the six conditions mentioned in the first part of Paragraph 202-10, namely, tuberculosis, neuropsychiatric conditions, paralysis agitans encephalitis, lethargia, amebic dysentary and the loss of the sight of both eyes.

3. Veterans with non-service connected disabilities other than the six above mentioned would not be eligible for hospitalization in veterans' hospital. Veterans with these disabilities would be eligible to draw benefits under the insurance plan.

4. The cash benefits (disability allowance) for non-service connected disabilities provided for under the amendment of July 3, 1930, are not effected except in cash of permanent and total disability. In this event it is simply provided that the veteran will not draw both benefits at the same time.

5. A veteran who has suffered a temporary total disability, for example a fractured leg, will draw benefits under the insurance plan as the needs require so long as he is totally disabled. When he has convalesced, if he has a permanent partial disability, he ceases to draw under the insurance plan and begins to draw whatever amount he is entitled to under the Act of July 3, 1930.

6. The Veterans' Bureau would be relieved of all administrative duties pertaining to constructing, equipping, staffing and operating a large number of veterans' hospitals scattered over a wide area.

The Bureau would also be relieved of the executive duties pertaining to the examination of veterans to determine the need of hospitalization and of arranging their transportation and admission to a veterans' hospital.

The duties of administrating the insurance plan would be added. The administration would be the same as the administration of disability insurance by a private concern.

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*The Medical Council of the Veterans' Bureau says that body has never made an estimate of the number of hospital beds required for veterans. It seems that Dr. Lewis I. Dublin, a member of the Council, made the estimate.

7. The Government would be relieved of the cost of constructing, equipping, staffing and operating a large number of veterans' hospitals. It would also be relieved of the cost of transportation, examinations, etc. The cost of the operation of the insurance plan would be added.

It is estimated that the insurance plan with the benefits set out in the amendment could be administered at a cost of $64,000,000.00 for the first year. These costs would diminish each year.

The cost of constructing, staffing, equipping, maintaining and operating veterans' hospitals cannot be estimated even approximately, and once buildings are erected and equipped and the staffs organized there is hardly a point at which they could be abandoned except at enormous sacrifice, nor could they be operated for the benefit of veterans when veterans no longer exist.

MEMBERSHIP IN THE

TENNESSEE STATE MEDICAL ASSOCIATION

EXPIRES DECEMBER 31, ANNUALLY

SEE YOUR COUNTY SECRETARY

AND PAY YOUR 1932 DUES

THE JOURNAL
OF THE
TENNESSEE STATE MEDICAL ASSOCIATION
Devoted to the Interests of the Medical Profession of Tennessee
Office of Publication, 510 Doctors Bldg., Nashville, Tenn.

H. H. SHOULDERS, M.D., Editor and Secretary

MARCH, 1932

EDITORIAL

CONCERNING THE SPHERE OF EXPERTS

In the last few years experts in various lines have occupied a place of greater importance and influence than formerly.

The title "expert" is applied to people without protest on the part of the person so designated.

A large number of investigations of various sorts have been made. The reports are usually voluminous. They are made to show that experts really conducted them. The title "expert" is supposed to give to the report some sort of a stamp of authority, more than the simple recitation of a discovered fact.

No one would deny but that experts are necessary and useful in their place. They may be dangerous outside of their proper place.

The field of the expert must be limited. The expert must sacrifice something to become an expert. One of the things he must sacrifice is broad knowledge.

Some weeks ago there appeared in a leading magazine a story of a business that went into bankruptcy. The business was that of manufacturing and selling a staple necessity. Its headquarters and plant were in a small town. Traveling salesmen were maintained in various territories. The concern had a reputation for integrity. Its traveling salesmen enjoyed the confidence of their customers. They were welcomed visitors. It was a sound prosperous business. As a result of some sort if investigation the conclusion was reached that the business was not progressing as fast as it might. An efficiency expert was employed to find out what was the matter and to consider new policies, if necessary. He took his job seriously and went to work. Among other things he called the salesmen in for a conference. He told them they must increase their sales ten per cent. The salesmen went back to their territories and did increase their sales ten per cent. The figures at the headquarters showed that the policies of the expert had worked—for a while. Later something else happened. Salesmen who had been trusted by their customers took advantage of the confidence and sold them more of the product than was needed. They put high pressure salesmanship to work. Then a reaction came. Former customers were not so cordial to the salesmen. In fact, they built up a sales resistance. The salesmen were not welcomed any more. Sales diminished and the business went into bankruptcy.

The efficiency expert, of course, was destroyed, but that is not the tragic part of the story. The tragedy lies in the fact that a large number of employees, workers, salesmen, and a large number of stockholders were injured.

The place of the expert is not at the head of the business.

An investigation is being made into the costs of medical care. It is alleged that experts are in charge of the various phases of the investigation. The costs of medical care can be reduced, certainly. So can the cost of everything else, but is that the only item or the most important item to be considered?

It is not a sound practice to judge a life by the acts of some one day. It is not sound to judge a system by the faults, or virtues, of some one phase. It is not sound practice to make a diagnosis on some one symptom, or some one laboratory report, however expert the person may be who makes the observation. The opinions and findings of experts had better be judged as such.

The forming of broad policies is not the proper field of an expert. This is a job for men of broad experience and broad knowledge and understandings of human individuals and their emotions, their desires and their needs.

Experts may travel faster for awhile. They will not in all probability travel further.

PATERNALISM AND SELFISHNESS

The charge is often made that people who oppose paternalistic legislation do it from motives of selfishness. It goes without saying, of course, that those who propose and support such legislation credit themselves with the virtue of unselfishness.

This is a weapon often used against the medical profession when doctors oppose certain forms of paternalistic legislation, alleged to be in the interest of the public health.

Doctors often conceal their real attitude, that is to say, they do not actively oppose some forms of paternalistic legislation because this very charge will be made.

A most interesting discussion of this subject may be found in a speech delivered by the Honorable Hiram Bingham, Senator from Connecticut, on the floor of the United States Senate, with reference to the so-called Sheppard-Towner Bill.[1] It was charged that those who opposed this particular piece of paternalistic legislation were selfish and that they had more interest in cows, hogs, chickens and pigs than they had in women and children.

Senator Bingham shows clearly that maternal and infant mortality not only did not decrease but actually increased in a majority of the states which adopted the act. The increases in mortality took place in states which had experienced a considerable reduction in maternal and infant mortality during the years immediately preceding the passage of the Act. No good effects could be demonstrated. A sort of meddlesome attention was promoted in all probability. Senator Bingham also gave the salary budget of one state for one year. It was as follows:

State Health Officer	$1,000
Director	3,600
Assistant Director	3,600
Clinical Instructor	1,800
Chemist for water and milk supply	1,800
Inspector of birth registration	1,500
Educational instructor	900
Six clerks	3,720
Stenographer	1,500
Bookkeeper	300

It is noted that the Health Officer allocated $1,000 of the money appropriated for women and children to himself. One can read this budget and find good grounds for suspecting where selfishness lies. A number of those seeking the reenactment of this law have unselfishly drawn salaries from it.

In the state in which this particular budget was approved the mortality of mothers and children increased while the Sheppard-Towner Act was in force.

Sound health policies are effective and worthy of the support of everybody.

The mere appropriation of money to be spent by a department designated as Health Department does not mean that that money will ever promote the health of anyone.

Sound health policies should be formulated first and a reasonable amount of money appropriated for carrying out the sound policies. The appropriation of money and the expenditure of money may be injurious instead of beneficial. It may injure the services already rendered and do nothing constructive.

A reasonable sum of money can be expended in the education of a boy with advantage all the way around. A large sum of money may be the cause of his ruin.

The good that comes from the expenditure of money in any cause when good does comes is not always proportionate to the amount of money spent.

MEETING OF THE TENNESSEE STATE MEDICAL ASSOCIATION

The next meeting of the Tennessee State Medical Association takes place in Memphis, Tennessee, April 12, 13, 14.

The Hotel Peabody has been designated as the headquarters hotel.

The Memphis and Shelby County Medical Society has an active committee on arrangements. The doctors of Memphis display every intention of doing their utmost to make this meeting a success.

Heretofore the second night of the meeting has been given over to a banquet. The host society has given the banquet at its own expense. As a result of an action by the House of Delegates, at Knoxville, this policy has been changed. A banquet will be had but it will be in honor of the President and each member will pay for his plate. The local society will provide whatever entertainment it may see fit to provide.

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[1] Title of address: "Why Should the Federal Government Bribe the States to Look After the Health of Their Own Citizens?"

CAN WE AFFORD STATE MEDICINE?*

J. G. R. MAINWARING, M.D.
Flint, Michigan

Part I

CAN THE UNITED STATES SAFELY EXPAND ITS FUNCTIONS FURTHER?

"If ever the people become inattentive to the public affairs, you and I, Congress and Assemblies, Judges and Governors shall all become wolves. It seems to be a law of our general nature, in spite of individual exceptions."—Thos. Jefferson in a letter to Edward Carrington.[1]

One of the most dangerous pastimes in the world is letting someone else spend your money! A sound business principle is one that requires those who have money to control its expenditure.

The obnoxious secret rebates of the railroads, secret division of fees by physicians, horse traders and others, secret commissions of purchasing agents and all sorts of graft by all kinds of officials, public and otherwise, all follow the fundamental fact that the benefited recipients have at their disposal the spending of other people's money. Human nature is too weak to be subjected to the seductive lures resident in spending money not one's own.

In government the squandering of public funds is an immediate outgrowth of the principle that other people's money is recklessly spent.

In a democracy, such as we have largely evolved, we have a system of "rule by organized minorities." There is only one type of influence brought to bear in our legislative bodies and there is only one aim. Organized groups harass and push their representatives constantly for legislation desired by them and with one end only, to do things which cost money. Each group desires something paid for out of funds raised from all of us. They threaten the security of our officials by an organized vote and, as it is other people's money, the officials give in to the pressure with enhanced security to themselves.

Up to this time there has not been a really strong organization formed for the sole purpose of putting the brakes on such expenditures and so having some control of their money which is so spent.

Individuals there are who are protesting, but, alone and unorganized, they are crying in the wilderness.

Under this system there is a constantly increasing stream of money coming from taxpayers flowing through legislative channels, controlled by self-seeking interested parties, both as to the amount of flow and its distribution. There has been no control at the headwaters, no halting of the mounting flood, and, as portions of China with a good rainfall and once green with fertility are now ruined and profitless deserts because of the draw-off of their waters due to the destruction of the headwaters control, so must a system of government like ours eventually be destroyed unless we take heed.

As a matter of history, aside from conquests, governments of the past have fallen most often from oppressive taxation made necessary by the squandering of rulers.

An individual who spends too much and becomes hopelessly involved sloughs off his debts by bankruptcy proceedings. So governments when hopelessly in debt fall, with the same results that debts are cancelled and a new start is made but at a cost of tremendous suffering.

A few figures will show how we are going down the same old trail:

The tax bill of Michigan and all her subdivisions of Government has increased from—

$40,462,353.56 in 1910 to $340,384,819.43 in 1930.[2]

The people of Michigan paid in federal and state taxes of all kinds over $500,000,000 in 1929.[3]

The total bonded indebtedness of all units of this State is $700,706,053 (1929, not including drain bonds and Covert road bonds not listed in Lansing.)

July 1, 1929, to June 20, 1930, the State paid up bonds to the amount of $33,736,826 but added in the same period $80,945,501![4]

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*This article taken from Michigan Journal, March, 1932.

In 1929, 1,110,697 village and city lots with assessed valuation of $1,310,025,594.00 were returned delinquent in taxes.

A total of 9,755,470 acres of rural property with a valuation of $226,428,925 was returned delinquent.

Total of State and local taxes returned delinquent for the same year was $36,352,835.83. This is more than the total State tax levy on property for that year, which was $29,500,000.

One-fourth of the acreage of the state was delinquent in taxes and when taxes were paid it was often done by borrowing the money and not getting it from income.[5]

This is enough to show where our state is headed; now for the nation.

The total annual tax budget of the whole nation in 1913 was $2,194,000,000.

In 1930 $10,700,000,000, an increase of 500 per cent.[6]

"From 1913 to 1930 the total expenditures of all government agencies increased from three billion dollars to fourteen billion dollars. The total amount of tax income necessary to defray the cost of the government has increased 442 per cent. The really alarming thing about this is not the fact that four and one-half times as much money is being spent, but the fact that expenditures have increased more than twice as fast as the combined earnings and income of the American people."

"To be more specific, here are some startling facts. In the year 1913 the total earnings of every person in the United States from all sources was approximately 34 billion dollars. Out of this income the government took eight and six-tenths per cent, or three billion dollars. But in 1930, out of a total income of every man, woman and child in the country, which will not exceed 70 billion dollars, the government expended 14 billions, or twenty per cent. Thus, in the seventeen years since 1913, the cost of government has increased 442 per cent, while the earning power of the people has increased by less than half that percentage."[8]

To meet this rising cost of extravagance in government, they constantly seek new ways of taxing new things. In Michigan we have introduced in the past few years state taxation of public utilities, corporation taxes, automobile weight taxes, gas taxes, and now are proposing a state income tax, a sales tax, a cigarette tax, raising the gas tax and even attaching other assets than the property in question for tax delinquency! Each new tax means more to spend, not a lessening of other taxes.

And now a lot of people are calling for the taking over and managing of the practice of medicine and surgery by our government!

What would that do to taxes?

There has been a study recently on the cost of medical care which probably is as exact as the figures can be. It is stated to be about $2,250,000,000 yearly. (One-third of what we spend for tobacco, one-half of what we spend for gum).[7]

That is, the government would have to take over an agency costing $2,250,000,000 to run now, and, with the way things are done, probably costing at least twice as much under government management.

England has already found the panel system a tremendous and unexpected burden.

We are rushing along a well established course known to historians, and every added tax hastens the end. We have just as good a set-up as Rome ever had in any of its hardest falls. Rome, too, with its Kings and Emperors, had a representative type of government where officials were elected by the citizens, and more or less subject to their control.

In those days the officials spent great sums on armies of conquest, luxurious public buildings, palaces of the most costly type, etc. To retain their offices they spent still more to build up great voting power by unnecessary jobs, retainers, hangers-on, soldiers, entertainers, and subsidies in the way of distribution of grain to the needy, who miraculously grew in numbers when the system worked well. No better scheme of giving a large organized vote the whip hand has been found than by a subsidy system, as England with its dole and its medical service has found out.

One of the best methods of vote getting was by giving the most gorgeous and often the most cruel public spectacles, by which a ruler was judged rather than by his ability or integrity. Good show, big vote.

The result was that the producers from whom the taxes were wrung would reach a point where the burden was too great, and, facing death in preference, they would stage a revolution. The slate would be wiped clean and again the cycle started.

Does not this sound more or less familiar, and are we not on the same course?

There has always been a limit to what could safely be raised by taxation. Can we afford to take up State Medicine when it only means another and dangerous burden?

As loyal citizens, not as physicians, we should fight for a great reduction in government expenditures; which means less welfare work, fewer bureaus, no subsidies, fewer employees, no dole, etc. This is necessary to prevent our government experiencing the certain fate of many predcessors.

There are a number of organizations whose literature is worthy of study and who have as a part of their program the fighting of mounting expenditures in government. Physicians should look into these movements and join hands with some of them for they can do more to prevent the added burden of an unsatisfactory State Medicine than we alone can.

It is suggested that the following organizations be written for literature:

Economy League of Michigan—
  1780 Penobscot Bldg., Detroit, Mich.
American Taxpayers League—
  Munsey Bldg., Washington, D. C.
Sentinels of the Republic—
  National Press Bldg., Washington, D. C.

REFERENCES

1. Agard, Walter R.: The Glory That Was Greece.
2. Economy League of Michigan.
3. Lovett, John: Address quoted in Free Press.
4. McKay, Frank D.: State Treasurer. Report quoted in Flint Journal, Dec. 20, 1930.
5. Powell, Stanley: Magazine of Michigan, Feb., 1931.
6. Broussard, L. A.: President's Annual Address to American Taxpayers League, Jan. 1, 1931.
7. Rappleye, W. C.: Director of Study Commission on Medical Education.
8. Metcalf, Senator Jesse H.: The Menace of Paternalism. A radio address, Dec. 20, 1931.

608 1st Nat. Bank Bldg.

DEATHS

Dr. Elizabeth C. Kane, Memphis; University of Nashville Medical Department, 1898; aged 56; died February 10, following a major operation at the Union Memorial Hospital, Baltimore.

Dr. Claude M. Kelton, Fort Lyon, Colorado, aged 55, died February 18, following an illness of several years.

NEWS OF WOMAN'S AUXILIARY

Mrs. Gragg

Tennessee State Medical Association

Advisory Council

C. M. Hamilton, Chairman, Nashville.
R. N. Herbert, Nashville.
L. T. Stem, Chattanooga.
Shields Abernathy, Memphis.
D. H. Anthony, Memphis.

Mrs. W. H. Gragg, Memphis, President.
Mrs. Rogers N. Herbert, Nashville, Chairman, Press and Publicity Committee.

PRESIDENT'S MESSAGE

In looking forward to the State meeting in Memphis, April 12th, 13th, 14th, Hotel Peabody, I see a golden opportunity to appeal to the doctors' wives who are not organized and working in some Auxiliary to come into the state organization as members at large. The price of membership is only one dollar and I am sure that you will be more than compensated in your contacts alone. There can be no more beautiful work than Auxiliary work. It is under the direct supervision of some of our most prominent medical authorities. To appreciate this work you have to know it. We are planning to have a sort of an Auxiliary School at our state meeting and there you will be brought in direct contact with what the work embraces, and what it is really doing. I feel sure that once a member at large you will not be satisfied until you have an organization in your own county. Come to Memphis, make yourself known to us, it will be our greatest pleasure to have you one of us, and to place at your disposal all the data that we have in regard to Auxiliary work.

I wish to take this opportunity to thank the lovely women who have been so generous and kind to me this year. You have indeed been an inspiration and I am most happy to call you both fellow-worker and friend. Looking forward to seeing you in April, I am,

Most sincerely yours,
MRS. W. H. GRAGG, *President.*

INVITATION

We, the Committee, wish to extend a most special invitation to both the women who are members of Auxiliaries and women who are interested in this work to attend the regular annual meeting of the Woman's Auxiliary to the Tennessee State Medical Association, April 12th, 13th, 14th, Memphis, Tennessee, Peabody Hotel. This is our first opportunity of entertaining you as an Auxiliary and we are anxious for a very full attendance. We are sure that there are many women in the state that will become as interested as we are if they know of the work. Come and help us put Tennessee where she rightfully belongs in this work. Looking forward to knowing all of you better, we are most cordially yours,

MRS. WILLIS CAMPBELL, *Chairman;*
MRS. W. T. BLACK, *Co-Chairman;*
MRS. PERCY W. TOOMBS,
MRS. W. T. BRAUN,
Committee.

KNOX COUNTY

Knox County Auxiliary reports that they are continuing with their program of philanthropy to the end of helping two orphan children at a local hospital and also needy families in the county. Several members have taken magazines to Beverly Hills Sanitarium. Dr. Walter Luttrell spoke to the Auxiliary on "How to Keep Out of the Poor House". He points out that wives should be in close touch with the husband's financial condition and work to the end of being an asset and not a liability.

Plans are being formulated for the Auxiliary to assist the nurses of Fort Sanders Hospital during graduation by furnishing transportation and lending moral support by attending the graduating program.

DAVIDSON COUNTY

An outstanding piece of work of the Auxiliary for February was a benefit card party under the general chairmanship of Mrs. Thomas G. Pollard. The money obtained will be used in furthering the program of health education and philanthropy. Mrs. J. D. Lester, Hygeia chairman, reported the placing of one hundred twenty (120) five-month subscriptions of Hygeia, the Health Magazine, in all the City and County, parochial and four colored schools.

NEWS NOTES AND COMMENTS

On March 4, we had received from the county secretaries dues for 1,039 members. This figure is equal to the average year in payment of dues. One especial encouraging feature is that more than 70 of these members were not on our list during the year 1931. At this rate our membership for 1932 will include more than 100 names who were not members last year. It appears that the effort of the county secretaries should be to see that every one who was a member in 1931 renews his membership, and if this is done our 1932 roll will be one of the largest in the history of the Association.

Dr. A. B. Dancy, of Jackson, was made president-elect of the Mid-South Post Graduate Medical Assembly at the recent meeting.

Dr. R. A. Douglas, of Huntingdon, has bought a lot next to Hotel Olive and is erecting an up-to-date office on it.

Dr. J. S. Lyons, of Rogersville, has returned from Chicago and Rochester where he has been studying surgery.

Dr. J. Ralph Hamilton, formerly of Dallas, Texas, is now associated with Dr. H. E. Christenberry, of Knoxville.

Dr. D. T. Hardin, of Fayetteville, has opened a new office near the Capitol Theater.

Early in February Dr. George W. Penn was injured in an auto accident near Humboldt.

Drs. Stewart Lawwill, C. C. Lassiter, W. W. Evans, and J. B. Phillips were special guests of the Chattanooga Kiwanis Auxiliary at the February meeting.

Dr. Joseph Travenick, Jr., of Nashville, announces the opening of his offices, Suite 726 Bennie-Dillon Building. Practice limited to urology and urological surgery.

MEDICAL SOCIETIES

Benton, Carroll, Henry, Weakley Counties—The society met one week late due to the regular date conflicting with the Mid-South meeting. Drs. M. D. Ingram and Earl Hillsman read papers discussing phases of the tuberculosis problem. A good attendance gave the papers a liberal discussion.

Davidson County—Feb. 23: "Acne", by Dr. Howard King. Discussion opened by Dr. E. E. Brown.

March 1: "Symptoms Due to Impairment of Kidney Function and Acidosis", by Dr. T. A. Mitchell. Discussion opened by Dr. Wm. R. Cate. Case reports by Dr. R. R. Brown.

March 8: "Encouragement in Dealing With Colonic Malignancies", by Dr. Fred W. Rankin, Rochester, Minnesota.

March 15: Representatives of the American Milk Commission.

March 29: Lantern slide demonstration of surface repairs for both function and appearance, by Dr. V. P. Blair, St. Louis, Missouri.

Hamilton County—Feb. 4: Dr. A. W. Adson, of the Mayo Clinic, discussed some of the problems of neurological surgery.

Feb. 25: "Simplification of Obstetrical Care", by Dr. H. P. Hewitt.

March 3: "Ileus", by Dr. Alton B. Ochsner, New Orleans, La.

March 10: "Looking for Applicants for Life Insurance Through the Glasses of a Medical Director", by Dr. Charles R. Henry.

March 17: "Calcium Metabolism", by Dr. W. D. L. Record.

Knox County—Feb. 9th: "The History of Syphilis", by Dr. A. H. Lancaster. Discussed by Drs. Depue, Monger and Barry.

Feb. 16th: "Adenoids", by Dr. R. G. Ashley.

Feb. 22nd: "The Senile Cataract and Its Treatment", by Dr. Potter. Discussion opened by Dr. Newman.

March 1: "Cardiac Arythmia", by Dr. H. C. Long.

Madison County—On Feb. 2, Dr. R. B. White read a paper entitled "Diseases of the Gall Bladder, Clinical and Surgical Aspects." Dr. Swann Burrus spoke on "Toxemia of Pregnancy." Both papers were intensely interesting and nearly all present joined in the discussion.

Drs. Powers and Brandon, of Lexington, and Drs. Smith and Pitts of Henderson were guests of the meeting.

Five-County Society—Putnam County entertained the Five-County Medical Society January 21. Twenty-six physicians were present. After a delightful meal papers were read by Drs. Crane, of Monterey, and Mooneyhan, of Rock Island. Drs. Taylor, of Cookeville, and Moore, of Algood, opened the discussions of the papers.

Officers were elected. Next meeting will be held in March with the Overton County doctors as hosts.

Roane County—On Feb. 16 the regular meeting was held at the City Hall in Harriman.

Dr. T. L. Bowman was the essayist for the meeting and read an interesting paper, which brought out a lively discussion. Several interesting cases were reported and discussed.

Sumner County—On February 3rd, the society met for election of officers and other business. A good attendance is reported and work for the coming year was planned.

OTHER MEDICAL SOCIETIES

The West Tennessee Medical and Surgical Association will meet this year at Jackson, May 26 and 27.

Dr. Sam T. Parker, of Jackson, is President and Dr. I. A. McSwain is the Secretary of the Association.

VANDERBILT UNIVERSITY MEDICAL SOCIETY

1. *Case Reports*:

(a) A Rare Ovarian Tumor Associated with Changes in the Secondary Sexual Characteristics—Dr. John M. Hardy.

An 18-year-old, single, white female after normal menarche and normal menstrual function for two years, suddenly ceased to menstruate. Shortly afterwards, coarse black hair appeared on the body, characteristically distributed like the male. The voice became husky. After two years she noticed a gradual increase in abdominal swelling. No disturbance of libido. Examination showed no acromegalia, masculine distribution of hair, hypertrophied clitoris, and cystic abdominal tumor. At operation multilocular ovarian cyst was removed. This proved to be carcinoma. Menses recurred and were regular. Tumor recurred one year later, was removed, with good recovery. Patient died two months later.

Case discussed by Drs. Goodpasture and Burwell.

(b) Stab Wound of Diaphragm With Herniation of Stomach Into Thorax. —Dr. J. M. Mayer.

M. S., white, male, age 31, entered the hospital two hours after receiving stab wounds in right and left chest, produced by a small pocket knife. Physical and x-ray examination revealed hemo-pneumothorax on right side. Three days later x-ray of chest showed signs suggestive of herniation of stomach through left diaphragm. Operation performed by transpleural and transperitoneal approaches, with successful reduction. Patient made an uneventful recovery.

Case discussed by Dr. Blalock.

2. A Roentgenological Study of the Lungs of Children With Ascaris.—Drs. A. E. Keller, H. T. Hillstrom, and R. S. Gass.

One hundred fifty-six children were studied. In some children with ascaris and negative tuberculin tests, widening in the hilar area with increase in the bronchovascular markings was found. These changes are possibly due to the repeated migration of ascaris larvae through the lungs. The changes are similar to those resulting from infection with the tubercle bacillus except that calficiation was not seen in the group with ascaris and negative tuberculin tests.

Paper discussed by Drs. Casparis, Leathers and Meleney.

3. Effects of Vitamin A Deficiency on Female Reproductive Organs of the Rat.—Mr. E. T. Ellison and Dr. K. E. Mason.

Excessive cornification of the vaginal epithelium in rats deficient in vitamin A (anti-xerophthalmia) is a specific effect of the A-deficiency. Its repair is directly proportional to the chronicity of the deficiency and often requires 100 days of A-therapy. Castration, pregnancy and partial inanition accelerate this repair by decreasing physiological activity of the epithelium. The marked prolongation of oestrus in A-deficiency is entirely due to associated retardation. Retarded placental development and foetal absorption may also occur in A-deficiency.

Paper discussed by Drs. Wolfe, Mason, Cunningham, and Casparis.

ALFRED BLALOCK, *Secretary.*

PROGRAM OF MEMPHIS MEETING OF THE TENNESSEE STATE MEDICAL ASSOCIATION

The following is a tentative program of the general session, together with a program of the Ear, Eye, Nose, and Throat Section, a program of the Railway Surgical Section, and a program of the Tennessee State Pediatric Association.

The Pediatric Association is not a section of the State Association, however, all the members of the State Association who are interested in diseases of children are cordially invited to attend. The meeting takes place on Monday, April 11th.

An official program will be mailed to members about April 1st.

NIGHT MEETING—APRIL 12, 1932

1. **Presidential Address:**

   DR. T. R. RAY, Shelbyville.
   "Shall the Future Policies of Organized Medcine be Aggressive or Submissive?"

2. **Address**

   DR. WALTMAN WALTERS, Rochester, Minn.
   "Recent Advances in the Treatment of Obstructing Lesions of the Biliary Tract."

3. **Talking Pictures:**

   (1) The Maggot Treatment for Chronic Osteomyelitis"
   (2) Anatomy of the Female Pelvis and Perineum.
   Courtesy—Petrolagar Laboratories, Chicago, Illinois.

DR. E. R. ZEMP, Knoxville:
"Gastric Ulcer"

DR. JOHN R. SMOOT, Knoxville:
"Skull and Brain Trauma"

DR. A. G. KERN, Knoxville:
"Mesenteric Abscess Complicating Typhoid Fever. Report of a Case."

DR. C. C. VINSANT, Maryville:
"Management of the Posterior Position of the Occiput"

DR. J. F. GALLAGHER, Nashville:
"Simplicity in the Treatment of Fractures"

DR. H. B. BRACKIN, Nashville:
"Should Criminals Have a Psychiatric Examination?"

DR. EUGENE M. ORR, Nashville:
"Sinusitis"

DR. W. D. HAGGARD, Nashville:
"Napkin Ring Carcinoma of the Sigmoid—Recognition and Operation—Lantern Slides"

DR. MURRAY B. DAVIS, Nashville:
"Empyema in Children"

DR. BARNEY BROOKS, Nashville:
"Surgical Treatment of Aneurysm"

DR. R. A. BARR, Nashville:
"Appendicitis—Report of 500 Cases"

DR. WILLIAM R. CATE, Nashville:
"The Relationship of Nephritis Hypertension and Heart Disease"

DR. A. E. KELLER, Nashville:
"The Clinical Manifestations, Treatment and Prevention of Ascariasis"

DR. THOS. D. MOORE, Memphis:
"Recent Advances in the Management of Prostatic Obstruction: Prostatic Resection vs. Prostatectomy"

DR. L. CARL SANDERS, Memphis:
"Diarrhea—A Troublesome Symptom"

DR. GEORGE R. LIVERMORE, Memphis:
"My Experience With Prostatic Resection"

DR. R. F. MASON, Memphis:
"The Modern Treatment of Burns"

DR. W. L. RUCKS, Memphis:
"Tuberculosis in Childhood"

DRS. A. R. BLISS AND R. W. MORRISON, M.S., Dept. of Physiology, University of Tennessee:
"A Comparison of Certain Xanthine Derivatives"

DR. A. H. MEYER, Memphis:
"Ephiphyseal Separation"

DR. STEVE W. COLEY AND DR. F. THOMAS MITCHELL, Memphis:
"Correlation of Clinical and X-ray Findings in Chest Conditions of Children"

DRS. H. C. SCHMEISSER, J. V. CALTAGIRONE AND J. L. SCIANNI, Memphis:
"Graphic Art and Its Application to the Teaching of Medicine" (Animated Film)

DR. J. W. MCELROY, Memphis:
"Sprue"

DR. P. W. TOOMBS, Memphis:
"The Hazard of Surgery in Obstetrics"

DR. C. C. TURNER, Memphis:
"The Neurological Interpretation of Some of the More Common Clinical Conditions"

DRS. W. R. BETHEA AND H. D. GRAY, Memphis:
"The General Use of Radiation in Therapy"

DR. W. C. COLBERT, Memphis:
"Staplylococcemia With Report of Cases"

EYE, EAR, NOSE AND THROAT

Tuesday, April 12, 1932

Clinic on Tuesday Morning, 8:30 A. M.
Papers on Tuesday Afternoon, 2:00 P. M.,
Hotel Peabody

1. **Chairman's Address:**

Dr. Robert E. Sullivan, Nashville

2. **Laryngeal Tuberculosis with Alcohol Blocking of the Internal Laryngeal Nerve in Advanced Stage:**

Dr. D. H. Anthony, Memphis

To open discussion:
Dr. Stewart Lawwill, Chattanooga
Dr. Hilliard Wood, Nashville
Dr. C. D. Blassingame, Memphis

3. **Cancer of the Orbit:**

Dr. J. W. Danley, Lawrenceburg

To open discussion:
Dr. E. C. Ellett, Memphis
Dr. H. C. Ezell, Nashville
Dr. Kate S. Zerfoss, Nashville

4. **Laryngectomy for Carcinoma of the Larynx:**

Dr. H. W. Qualls, Memphis

To open discussion:
Dr. Eugene Orr, Nashville
Dr. Jas. H. Lipsey, Memphis
Dr. Reece Patterson, Knoxville

5. **Glaucoma:**

Dr. J. R. Hamilton, Knoxville

To open discussion:
Dr. M. M. Cullom, Nashville
Dr. W. H. Steel, Chattanooga
Dr. Thos. L. Davis, Chattanooga

6:30 P. M. DINNER

Address by Dr. E. C. Ellett, Memphis
"Affections of Lacrimal Apparatus"

WEDNESDAY, APRIL 13, 1932

9:00 A. M., Hotel Peabody

6. **Nutrition As It May Influence Pathological Conditions of the Ear, Nose and Throat:**

Dr. F. E. Hasty, Nashville, Tenn.

To open discussion:
Dr. John Shea, Memphis, Tenn.

7. **Peritrachael Abscess:**

Dr. W. D. Stinson, Memphis

To open discussion:
Dr. W. G. Kennon, Nashville
Dr. A. B. Dancey, Jackson
Dr. G. W. Burchfield, Maryville

8. **Treatment of Chronic Otitis Media with Iodine Dusting Powder:**

Dr. Guy Maness, Nashville

To open discussion:
Dr. Fred E. Hasty, Nashville
Dr. G. H. Berryhill, Jackson
Dr. R. G. Reaves, Knoxville

9. **Herpes Zoster Ophthalmicus:**

Dr. J. B. Stanford, Memphis

To open discussion:
Dr. T. C. Chapman, Brownville
Dr. H. E. Christenberry, Knoxville
Dr. U. B. Jones, Johnson City

PROGRAM RAILWAY SURGICAL SECTION

Tennessee Medical Association
Tuesday, May 10, 1932
Hotel Peabody, Memphis, Tenn.

Chairman's Address: "The Doctors as a Witness"

Dr. B. S. Rhea, Lebanon, Tenn.

"First Aid in Small Towns"

Dr. J. A. Hardin, Sweetwater, Tenn.

Dr. B. W. Bagwell, Madisonville, Tenn.

To open discussion:

Dr. Lucian Burch, Nashville.

"Principles Involved in the Treatment of Fractures"

Dr. Duncan Eve, Jr., Nashville.

To open discussion:

Dr. S. R. Miller, Knoxville.

"Electrical Injuries"

Dr. J. A. McCulloch, Maryville.

To open discussion:

Dr. E. J. Newell, Chattanooga.

"Non-penetrating Injuries of the Abdomen"

Dr. Battle Malone, Memphis.

To open discussion:

Dr. E. L. West, Johnson City.

Every Railway Surgeon in Tennessee is invited to attend this meeting.

A. F. RICHARDS, Secretary,
Railway Surgical Section.

TENNESSEE STATE PEDIATRIC ASSOCIATION

Memphis, Tenn., Hotel Peabody

April 11, 1932

President, E. Clay Mitchell, M.D., Memphis, Tenn.

Vice-President, Milton K. Lewis, M.D., Nashville, Tenn.

Secretary-Treasurer, Joe T. Smith, M.D., Knoxville, Tenn.

Executive Committee

Oliver W. Hill, M.D., Knoxville, Tenn.
Tom Mitchell, M.D., Memphis, Tenn.
H. R. Casparis, M.D., Nashville, Tenn.

9:00 A.M. Introductory Remarks.

President E. Clay Mitchell, Memphis, Tenn.

9:15 Bifurcation of the Bowel in the New Born.

Dr. W. Dulaney Anderson, Chattanooga.
To open discussion:
Dr. Wm. P. Graves, Memphis.
Dr. John Lee, Nashville.

10:00 The Value of Various Immunizing Agents.

Dr. H. G. Bradley, Nashville.
To open discussion:
Dr. Oliver W. Hill, Knoxville.
Dr. Tom Mitchell, Memphis.

10:45 Tetany in Children.

Dr. Geo. Baker, Knoxville.
To open discussion:
Dr. W. E. VanOrder, Chattanooga.
Dr. Owen H. Wilson, Nashville.

11:30 The Social Problem of Pediatrics.

Dr. Clifford G. Grulee, Chicago, Ill.

Luncheon 12:30 to 2:00

Guests of Memphis Pediatric Society
Place to be announced

2:00 P.M. Allergy in Children.

Dr. Jas. C. Overall, Nashville.
To open discussion:
Dr. H. C. Casparis, Nashville.
Dr. Gilbert J. Levy, Memphis.

2:45 Report of a Case of Epidural Abscess with Staphylococcic Meningitis—Operation and Recovery.

Dr. Eugene Rosamond, Memphis.
To open discussion:
Dr. H. D. Long, Chattanooga.
Dr. W. Lee Rucks, Memphis.

3:00 Concerning Pediatric Organization.

Dr. Robt. A. Strong, New Orleans, La.

4:00 Business Meeting.

Banquet 8 P. M., Hotel Peabody.

Papers limited to 20 minutes (except guest papers).

Discussions limited to five minutes.

Transportation will be furnished for any member, or guest, by the Memphis Pediatricians, to any hospital or clinic that they might wish to visit.

Members of the State Medical Association over the State, who are interested in pediatrics, are especially invited to attend this meeting, which meets the day preceding the general session.

ABSTRACTS OF CURRENT LITERATURE

DERMATOLOGY

By E. E. Brown, M.D.
Doctors Building, Nashville

Roentgenotherapy of the Spinal Region in Dermatology, by Harry R. Foerster, M.D., Milwaukee, Wisconsin. Archives of Dermatology and Syphilology, February, 1932.

The author mentions briefly indirect irradiation for psoriasis, lupus erythematosus, and also for the thyroid, the ovaries, the pituitary, the liver, the spleen, the suprarenal glands, and the vegetative nervous system. He then goes into considerable detail concerning irradiation of the spine. He discusses the possible biologic or physiologic action; giving views of many authorities.

He next deals with the technique of treatment, outlining the dosage, areas to be treated and frequency of treatment.

He reports a number of cases treated under the various heads, viz: lichen planus, eczema, neurodermatitis, pruritus, dermatitis herpetiformis, scleroderma, Raynaud's disease, and mal perforant. Complications are also considered.

He closes by stating that Roentgen irradiation of the spinal region leads him to conclude that this form of therapy is the most satisfactory method of treating patients with acute or subacute generalized lichen planus, and that it is of considerable value in chronic cases. The results of other conditions were variable, but worthy of consideration, especially as an adjunct to other treatment.

OPTHALMOLOGY

By Robert J. Warner, M.D.
Doctors Building, Nashville

The Results of Ophthalmic Operations. T. H. Butler. Archives of Ophthalmology, January, 1932.

This article is a survey of the results of the most important operations on the eye obtained by the author during the past twenty-seven years in England and in Palestine.

The results of extraction of cataract are influenced by four factors: the skill of the surgeon, the character of the nursing, the behavior and condition of the patient and the nature of the environment. Butler considers the first not all-important; the second is of vital importance; the third is probably the most important factor in success, and regarding the fourth, there is virtue in the "ophthalmic atmosphere"; eye wards are preferable to nursing homes.

The author summarizes: A patient in reasonable health who is operated on by a surgeon of sufficient ability and who is well nursed under good conditions has at least a 90 per cent chance of obtaining good acuity after an operation for the extraction of cataract.

In the treatment for congenital dislocated lens, he performs an iridectomy, using an iris hook, as it is impossible to seize the iris with forceps. The coloboma is laid opposite to the visible edge of the lens. If there is a perfect suspensory ligament, treatment had better end here. If the zonule is absent or very imperfect, a corneal incision is made across the axis of the coloboma and the lens is removed with a vectis.

In traumatic dislocation, if the lens has fallen into the vitreous and remains there, it is best left alone.

If the lens from time to time enters the anterior chamber, it should be removed. If it is at the time in the vitreous, and opaque, a preliminary iridectomy should be made. A large corneal section is made and a strong beam of light is directed on the lens. It is drawn forward with a lens hook; a flat spoon is slipped behind it, and it is expressed. If the lens is in the anterior chamber, with the patient seated for the operation, often a downward section is best.

If acute glaucoma is seen early, treatment with physostigmine (eserine) often results in recovery. Iridectomy is the operation of choice. In glaucoma simplex, the author has in the past five years more and more given up trephining for the operation for iridencleisis or iridotasis.

In strabismus, he usually attacks both the external and the internal recti. Tenotomy is rightly considered a thoroughly bad unsurgical procedure. Recession is far better both in theory and in practice.

With an experience of four or five hundred excisions of the lacrimal sac, the author is well satisfied with the results. In the removal of magnetizable foreign bodies, he prefers the Haab technic, but sometimes finds it necessary to extract through a scleral incision.

ORTHOPEDIC SURGERY

By Robert F. Patterson, M.D.
Medical Arts Building, Knoxville

Liver Meal in the Treatment of Amyloidosis in Surgical Tuberculosis. By Bainerd Whitbeck. Journal Bone and Joint Surgery, January, 1932.

An amyloidosis in surgical tuberculosis is a comparatively rare condition. It is almost universally fatal. It results from long continued suppuration as from chronic abscesses or sinuses.

The symptoms include "Emaciation, waxey, yellowish palor", a severe secondary anemia—large prominent abdomen with markedly enlarged and firm liver and spleen, and large quantities of albumen in the urine with waxey casts in most cases.

He reports seven cases treated by this method. Tuberculous infection of bone had been active for two or more years in all cases. All of the children were doing poorly and were rapidly growing worse at the beginning of treatment.

"The specific theraphy consisted of the administration of a concentrated whole liver in three daily doses of four grams each for a period of two years. In addition, the children were confined to their beds and received daily salt baths and dressings and heliotheraphy or ultra-violet light theraphy. An adequate diet, including all the vitamines was given."

Of the seven treated, two died; the remaining five showed no clinical evidence of amyloidosis at the end of twelve to eighteen months treatment.

In the cases that died, one succumbed shortly after treatment began. It was evidently too far advanced. The other child died after fourteen months treatment. Retrogression of lardaceous disease, was evident, however.

Detailed reports of his cases are given.

PEDIATRICS

By John M. Lee, M.D.
Doctors Building, Nashville

Hemophilia. Treatment by Protein Sensitization. R. Cannon Eley, M.D., and Stewart H. Clifford, M.D. Amer. Jour. Dis. Children, December, 1931.

Eight children suffering from hemophilia were treated by protein sensitization after the method observed by Vines in 1920, and Mills in 1926. After the diagnosis was made from history and the coagulation time of the blood, the coagulation time of the capillary and venous blood was determined. Then 1 c.c. horse serum was injected intradermally, to determine if the patient were sensitive. If no reaction developed at the site of injection, the patient was rendered sensitive to horse serum by the intramuscular injection of 4 c.c. of the serum. After 8 to 10 days the intradermal injection was repeated, a wheal at the site of injection indicating that the patient was sensitive to the foreign protein.

A few hours after the development of the wheal the coagulation time of the capillary blood was markedly reduced, but no change was noted in the coagulation time of the venous blood. In order to maintain this hypersensitization, which is necessary to maintain the reduction in the coagulation time of the capillary blood, the intradermal injection of serum must be repeated. The interval between these injections is determined for each individual by testing the coagulation time of the capillary blood. When this coagulation time becomes lengthened beyond the normal, the injection should be repeated. This interval between injections varies between 12 and 18 days, the average being 14 days.

The authors found this method of treatment effective in the prevention or control of bleeding from superficial injuries, but was of no value in controlling hemorrhage from the larger blood vessels or in preventing hemorrhagic effusions into joints, subcutaneous hematomas or intestinal bleeding.

SURGERY — GENERAL AND ABDOMINAL

By John L. Dies, M.D.

1213 Exchange Building, Memphis

Peritoneal Adhesions. Their Prevention by the Use of Digestive Ferments. Alton Oschner, M.D., F. A. C. S., and Earl Garside, M.D., New Orleans, La. Surgery, Gynecology and Obstetrics. Vol. LIV, Feb. 15, 1932. No. 2A, pp. 338-359.

Peritoneal adhesions are protective in the presences of infection. Normally, the diffuse fibrinous adhesions which form in the peritoneal cavity following mechanical, chemical, or bacterial trauma disappear after their usefulness has been served, the fibrin being digested by a proteolytic ferment liberated from polymorphonuclear leucocytes. If the fibrin is not removed, it becomes organized, i. e., replaced by fibrous tissue. Following division of the fibrous adhesions, they may recur. Individuals with an inherent tendency toward the development of fibrous tissue; i. e., adhesions diathesis, or keloid tendency are especially apt to reform adhesions after their division.

Numerous substances and methods have been used to prevent the formation and reformation of adhesions, but few have proved to be of any value.

In the present investigation, the efficacy of digestive ferments in the prevention of the formation and reformation of peritoneal adhesions was determined.

Following division of pre-existing adhesions, adhesions reformed in 100 per cent. If, however, saline solution was added to the peritoneal cavity following division of the adhesions, few or no adhesions reformed in 13.32 per cent. If trypsin and papain solutions were added, few or no adhesions formed in 42.28 per cent and 90.89 per cent, respectively. It is evident that experimentally, at least, digestive ferments, (especially papain), are of value in preventing the reformation of peritoneal adhesions.

Trypsin and papain solutions have been used in 4 clinical cases. The period of observation is still too short for one to draw any conclusions concerning the end results in these cases. In one case, however, operated upon several times for adhesion ileus, in which trypsin was employed, there has been a recurrence of adhesions. The others have remained free from symptoms six months to five years. From both our experimental and clinical observations, we are convinced that the intraperitoneal injection of papain solution in the dilutions recommended is entirely without danger.

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ROLL OF COUNTY SOCIETIES

County	President	Secretary	Meeting Date
Anderson	W. L. Carden, Andersonville	J. S. Hall, Clinton	1st Mon., 2 P.M.
Bedford	T. H. Woods, Bell Buckle	W. H. Avery, Shelbyville	3rd Thurs,. 2 P.M.. Dr. Ray's office.
Benton	See Carroll County		
Blount	E. H. Lowe, Maryville	J. A. McCulloch, Maryville	Thurs, 8 P.M., First Nat'l Bank Bldg.
Bradley	W. B. Campbell, Cleveland	S. J. Sullivan, Cleveland	1st and 3rd Thurs., 7 P.M., Court House
Campbell	L. M. Scott, Jellico	F. A. McClintock, Newcomb	4th Thurs.
Carroll		L. E. Trevathan, Bruceton	Carroll, Weakley, Benton, Henry, 2nd Tues., Hotel Lynn, McKenzie.
Carter	Paul S. Williams, Elizabethton	E. T. Pearson, Elizabethon	1st Tues., 7:30 P.M., First Nat'l Bk. Bldg.
Chester		L. E. Luna, Parsons	With Decatur and Henderson, 2nd Tues.
Claiborne	See Hancock County		
Clay	See Macon County		
Cocke	J. A. P. Shields, Hartford	J. E. Hampton, Newport	1st Tues.
Coffee	E. P. Vaughan, Manchester	C. E. Evans, Tullahoma	1st Thurs.
Crockett	See Dyer County		
Cumberland	E. W. Mitchell, Crossville	V. L. Lewis, Crossville	With Overton, White, 3rd Thurs.
Davidson	L. W. Edwards, Doctors' Building	N. S. Shofner, Doctors' Bldg.	Every Tues., 8 P.M., Doctors' Bldg.
Decatur			(See Chester County).
Dickson		W. J. Sugg, Dickson	
Dyer, Lake, C'ckett	E. S. Hopper, Alamo	E. H. Baird, Dyersburg	1st Wed., monthly.
Fayette		J. W. Morris, Somerville	Fayette-Hardeman, 1st Thurs.
Franklin		Jno. P. Grisard, Winchester	Last Fri., 7 P.M., Court House.
Gibson	G. C. Bryant, Milan	F. L. Roberts, Trenton	
Giles	F. C. Gaines, Pulaski	T. F. Booth, Pulaski	4th Thurs., Citizens Bank.
Greene	L. E. Coolidge, Greeneville	M. A. Blanton, Mosheim	2nd Tues., 6:30 P.M.
Hamilton	John B. Haskins, Med. Arts Bldg.	S. F. McIntosh, Volunteer Bldg	Each Thurs., 8 P.M., Manufacturers' Ass'n Bldg.
Hamblen		P. L. Henderson, Morristown	
Han'k, Cl'b'ne, U'n		J. H. Carr, Maynardsville	2nd Mon.
Hardeman	See Fayette County	J. Y. Alexander, Middleton	1st Tues., each quarter, Bolivar.
Hardin, Lawrence, Lewis, P'ry, W'yne		C. C. Stockard, Lawrenceburg	Last Tues.
Hawkins	W. C. Lyons, Surgoinsville	J. S. Lyons, Rogersville	
Haywood	G. G. Mulherin, Brownsville	J. L. Edwards, Brownsville	Last Tues., 7 P.M.
Henderson		J. F. Goff, Lexington	(See Chester County).
Henry	R. G. Fish, Paris	A. A. Oliver, Paris	(See Carroll County).
Hickman	J. S. Beasley, Centreville	W. K. Edwards, Centreville	
Humphreys		W. W. Slayden, Waverly	
Jackson	J. D. Quarles, Whitleyville	L. R. Anderson, Gainesboro	1st Fri., Court House (See Macon County).
Jefferson		B. M. Tittsworth, Jefferson City	
Johnson	See Sullivan County		
Knox	Tom Barry, Medical Bldg.	Jesse C. Hill, 4323 Lyons View Pk.	Every Tues., 8 P.M., Medical Bldg.
Lake	See Dyer County		
Lauderdale	Joe B. Lackey, Ripley	J. H. Nunn, Ripley	2nd Thurs.
Lawrence	See Hardin County		
Lewis	See Hardin County		
Lincoln	W. S. Joplin, Fayetteville	L. L. Sheddan, Fayetteville	
Loudon	J. G. Eblen, Lenoir City	Avery Leeper, Lenoir City	1st Thurs., Loudon; 3rd Thurs., Lenoir City, 7 P.M.
Macon	M. H. Allen, Lafayette	P. East, Lafayette	1st Wed. each quarter.
Madison	W. B. Eason, Jackson	B. C. Arnold, Jackson	1st and 3rd Tues., 7:30 P.M., Y.M.C.A.
Marshall		J. A. Hardison, Lewisburg	4th Thurs.
Maury	J. S. Covey, Culleoka	W. E. Black, Columbia	2nd Mon., 11 A.M., Elk Lodge Room.
Monroe	P. E. Parker, Sweetwater	H. M. Kelso, Madisonville	2nd Tues.
Montgomery	J. H. Ledbetter, Clarksville	R. B. Macon, Clarksville	3rd Thurs. night.
Morgan		J. F. Love, Lancing	
McMinn		C. O. Foree, Athens	2nd Thurs., 2 P.M. Dr. Nankivell's office.
McNairy		H. C. Sanders, Selmer	3rd Thurs.
Obion	C. B. A. Turner, Union City	F. B. Kimzey, Union City	
Overton	See Cumberland County	A. B. Qualls, Livingston	3rd Fri.
Perry	See Hardin		
Polk		F. O. Geisler, Isabella	
Roane		W. W. Hill, Harriman	1st and 3rd Tues., 1 P.M., Red Cross Rooms.
Robertson	S. J. Fentress, Goodlettsville	W. F. Fyke, Springfield	3rd Tues.
Rutherford	V. S. Campbell, Murfreesboro	J. A. Scott, Murfreesboro	
Scott		D. M. Woodward, Oneida	2nd Wed.
Sevier		R. J. Ingle, Sevierville	1st Mon., 7 P.M., 1st Nat'l Bank Bldg.
Shelby	H. B. Everett, Broad St.	A. F. Cooper, Bk. of Com. Bldg.	1st and 3rd Tues., Library Bldg., University of Tennessee
Smith		Thayer S. Wilson, Gordonsville	1st Fri.
Sullivan		W. K. Vance, Jr.	1st Fri.
Sumner	L. M. Woodson, Gallatin		
Tipton		L. C. Newman, Covington	
Unicoi		J. R. Moody, Erwin	Every other Thurs.
Union	See Hancock County		
Warren		Jno. S. Harris, McMinnville	1st Wed., 1:30 P.M.
Washington		C. W. Friberg, Johnson City	2nd Thurs. at noon, Hotel John Sevier.
Wayne	See Hardin County		
Weakley	T. B. Wingo, Martin	J. E. Taylor, Dresden	3rd Wed., May, Aug., and Nov., at Martin; also see Carroll County.
White	A. A. Bradley, Cookeville, R.F.D. 5	S. E. Gaines, Sparta	2nd Thurs., Dr. Gaines' office. See Cumberland.
Williamson	J. W. Greer, Franklin, R. 2	K. S. Howlett, Franklin	2nd Tues.
Wilson	L. D. Cotten, Alexandria	J. R. Bone, Lebanon	Thurs. after 1st Wed., 2:00 P.M.

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A CONSIDERATION OF CARCINOMA OF THE LARGE BOWEL*

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AND
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SURGERY in cases of malignant disease of the colon, although still abounding with opportunities for disaster and pitfalls for the uninitiated, has reached a stage in present-day development far in advance of former years. Although there still remains much to be desired regarding operability and end results in addition to surgical mortality, recent progress augurs favorably for the future. As is so frequently true of carcinoma elsewhere in the body, our greatest difficulty is in the fact that early pathognomonic symptoms of carcinoma of the large bowel are woefully lacking. The surgeon is thus doomed first to receive his patient when far advanced disease already exists. Widespread education of the lay public, and omnipresent alertness and suspicion of the initial examining physician afford at present the only avenues of opportunity to improve this situation. Besides earlier diagnosis, standardized and systematic co-operative treatment, together with improved surgical procedures, offer the victim of this disease his greatest chance for cure.

SYMPTOMS

The patient affected with carcinoma of the colon may seek medical attention because of local symptoms, or, on the other hand, because of extremely indefinite systemic manifestations. In the former case, attention is immediately directed toward the colon, and with the aid of modern diagnostic methods, the offending lesion is readily detected. In the latter case, the true lesion is often masked behind the clinical picture of primary anemia, gastric malignancy, cholecystic dyspepsia, or other misleading syndromes. In order to avoid this undesirable situation, a true appreciation of the varied clinical phenomena attributable to carcinoma of the colon is desirable. Clinically and physiologically, the right and left portions of the colon must be considered as distinct entities.

The symptoms of malignant lesion of the right side of the colon may be classified in three groups: (1) dyspeptic, often diagnosed chronic appendicitis, gall bladder disease, and so forth; (2) inanition, and anemia of indeterminate nature, and (3) a mass accidentally discovered in the right side of the abdomen, either by the patient or the physician.

In the first group the patients constitute a large number of those with carcinoma of the colon. They may suffer from mild or subacute pain in the region of the appendix, or their symptoms may be more of the "indigestion type" possibly suggestive of some typical disorder of the biliary or intestinal tract. The vague nature of these complaints serves only to mask the true pathologic change, and permits the development of an extensive lesion before its presence is even suspected. This state of affairs is not limited to malignancy of the right half of the colon, however, as 90 per cent of carcinomas of the whole colon fail to cause pathognomonic symptoms in the early stages when the prognosis following early and radical extirpation would be most favorable. This fact leads us to emphasize the extreme desirability of thorough and painstaking examination of the colon in any cases presenting a change of intestinal habit or intestinal irregularity, such as a mucous diarrhea, increasing constipation, or alternate periods of constipation and diarrhea. Likewise, pain or tenderness in the lower right quadrant of the abdomen, which may come and go at intervals, but fails to disappear entirely at any time, requires investigation of the gastro-intestinal tract. Almost as frequently as one encounters the patient with carcinoma of the rectum who has recently had a hemorrhoidectomy, one sees the patient with a lesion of the right side of the colon who has been recently subjected to appendectomy without relief of symptoms.

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*Read before the Bi-County Medical Society, Bristol, Tennessee, March 9, 1932.

The patients in the second group present an equally misleading clinical picture on cursory examination. The insidious onset of symptoms, the marked anemia sometimes approaching the proportions of a primary disease of the blood, or the loss of strength and weight, often direct attention at first sight to the stomach or blood-forming organs. The anemia is not associated with any loss of blood, and may be detected only in the course of a general examination. The explanation of this marked tendency of carcinoma of the right side of the colon to produce profound anemia is unknown; however, it appears to be connected in some way with an abnormal permeability and resultant perverted absorption of toxins in the presence of malignancy. Often this process has advanced to such a degree that the concentration of hemoglobin is lowered to 20 or 25 per cent before the patient presents himself for examination. The frequency with which this situation is encountered demands an investigation of the colon in every case of unexplained anemia before a diagnosis of either secondary or primary anemia is justifiable. Loss of strength, which perhaps prohibits the patient from performing his ordinary duties, or significant loss of weight without obvious cause, demands investigation of the large bowel. Although the insidious onset of these symptoms adds greatly to the difficulties of early detection of malignant disease of the colon, it also emphasizes the importance of ever-present alertness and suspicion when a patient manifesting such a syndrome is encountered. Thus, we would stress the fact that it is even more important to distinguish between primary anemia and carcinoma of the colon, than between primary anemia and carcinoma of the stomach, as in the former case one is more likely to find a resectable lesion.

The patients in the third group, who constitute about 10 per cent of the total, are those in whom a tumefaction is accidentally discovered in the right side of the abdomen. The lump may be found first by the patient, who then consults his physician for diagnosis, or it may be detected during the course of general examination.

In the left half of the colon, obstructive phenomena dominate the clinical picture. These may be acute, subacute or chronic. Only rarely is one fortunate enough to discover a carcinoma in the left half of the colon if obstruction is not present. Ordinarily, long standing chronic stasis of varying degrees of severity is present. Not infrequently subacute obstruction has existed for a shorter period. In a smaller group of cases, about 5 per cent of the whole, a sudden acute obstruction appears without previous warning. Such cases present a most trying task for the surgeon, since he is confronted with a potentially fatal, acute condition superimposed on a chronic malady of considerable magnitude. Fortunately, more often the picture is one of gradually increasing constipation or irregularity of the bowel in cases in which previously evacuations from the colon have been regular. As Rutherford Morison so aptly expressed it: "Increasing constipation of recent origin in an elderly person, only overcome by purgatives, suggests malignant disease of the left half of the large bowel"; or in the striking words of Moynihan: "In left colonic growths, constipation is the rule, while in right colonic growths, constipation is rare."

Occasionally, when the stenosis is progressive and gradually becoming complete, borborygmus and visible peristalsis may be noted on abdominal examination. The former may be associated with change in the intestinal content, increased flatulence or degenerative metamorphosis in the tumor, or accompanying obstructive changes. Visible peristalsis is less frequently observed, as the patient must be thin and sufficient obstruction exist to produce proximal dilatation.

It seems unnecessary to stress the significance of melena in malignant lesions of the large bowel situated distal to the transverse colon. Blood in the stool or on the stool may give the first warning, and is never to be disregarded until a satisfactory examination of the colon disproves the presence of malignancy. Bleeding is the most common symptom of left-sided colonic and rectal lesions. If a patient has noted recently some bleeding hemorrhoids, suspicion should always be aroused. The unfortunate patient with a carcinoma of the rectum or sigmoid who has recently been subjected to hemorrhoidectomy without relief of symptoms is too common. The presence or absence of occult blood in the stool is of little significance in this regard, as lesions of the colon distal to the splenic flexure, if they bleed, cause gross blood in or on the stool. If the growth is situated proximal to the transverse colon, melena seldom occurs. Tenesmus is noted in rectal growths in direct relationship with the site of the lesion, being commonly associated with low rectal growths, and less frequently is invoked by higher lesions. Proximal to the middle of the sigmoid, it possesses no significance as a symptom of carcinoma of the colon.

DIAGNOSIS

The greater accuracy in diagnosis of carcinoma of the colon which has been attained during recent years, may be largely attributed to the remarkable developments of modern roentgenoscopy. Before considering this phase of colonic diagnosis, one should stress the paramount importance of a digital examination of the rectum during the course of every general examination. As a routine procedure in the examination of every patient, digital examination of the rectum should never be neglected. For relatively low lesions the proctoscope affords direct visualization and the opportunity of obtaining a biopsy specimen for exact determination of the nature and grade of the lesion.

Of first significance to the diagnostician dealing with tumors of the large bowel, is the roentgenoscopic study of the colon. Careful roentgenoscopic examination, performed under the fluoroscope with the barium enema, is virtually indispensable for accurate localization and revelation of the gross nature and size of the tumor. The inadvisability of using the barium meal by mouth is twofold: visualization of the colon is far less satisfactory, and impending acute obstruction may easily be converted from a potentiality into an actuality. The gravity of the situation is at once greatly enhanced in the face of this handicap. The accuracy of colonic roentgenoscopy at The Mayo Clinic has been greatly augmented by the use of a modification and elaboration of Fischer's technic (inflation with air after partial evacuation of the enema). Not only have more topographic details of the tumor become apparent by the utilization of this method, but lesions previously totally obscured by the large mass of barium have been discovered for the first time. In fact, the use of these modern methods in the hands of a skilled roentgenologist affords such accurate diagnosis in malignant disease of the large bowel, that in 1929 at the clinic error in roentgen diagnosis was made in only three of 102 cases of carcinoma of the colon beyond the transverse segment, as proved at operation. The filling defect of carcinoma of the colon is obstructing, annular, or polypoid, and each of these types may be attended with a varying degree of spasm. They are all characterized by the roughened irregularity of the narrow canal, by the clear boundaries of the lesion, its constancy of position, and often by association with a palpable mass. In the future, even greater reliance may be placed on the roentgenoscopic examination as technical methods and experience become more advanced.

Pathology and Pathologic Physiology

Although the basic and fundamental factors involved in the formation of carcinoma remain as obscure now as formerly, certain recent observations afford some significant data on contributing conditions. The relationship between certain common nonmalignant lesions in the colon and subsequent carcinomatous growths in this organ is too definite and striking to be ignored. That polyps, either multiple or single, are precursors of carcinoma in a not inconsiderable number of cases can no longer be denied. One would be loath to assert unreservedly that this sequence of pathologic change occurs in every instance, but we are convinced that this developmental cycle exists more frequently than is usually suspected. Two distinct varieties of polyps are common in the colon: the polyp which results from inflammatory changes, and the primary polyp, possibly of congenital origin, which is a true neoplasm in its own right. This primary type of polyp may exist as adenomatous tumors diffusely scattered throughout the large bowel, giving rise to the condition known as polyposis, or "polypoidosis". In another form this congenital polyp may be evidenced by single or multiple discrete tumors involving the surface of the bowel from the ileocecal coil to the rectum. Both of these types have a tendency to be familial and undergo malignant metamorphosis in a definite percentage of cases.

In a recent series of cases in The Mayo Clinic, FitzGibbon and Rankin studied a group of patients harboring polyps of the colon, and beyond question observed the pathologic sequence from a benign to a malignant lesion. Histopathologic graded steps in this transition may be clearly seen. In a series of thirteen cases of polyps, twenty-four definite carcinomas were found. In two cases, carcinoma was not found, which means that eleven patients with polyps in the colon harbored twenty-four distinct and discrete carcinomas, a ratio of 8 to 3. This work is confirmed by reports of Hauser, Wechselmann, and more recently, by Schmieden. The obvious clinical conclusion forced on one by these observations is that polyps of the colon must be considered in the same light as carcinomas, and treated accordingly. One could not practice more superior prophylactic surgery against a potentially lethal condition than to remove a polyp-bearing portion of the colon prior to the development of true carcinoma in this area.

In order to obtain a true appreciation of the pathology and pathologic physiology of carcinoma of the colon, it is necessary to consider the right and left halves of the bowel as virtually distinct entities in accordance with their divergent embryologic, anatomic, and physiologic aspects. The oral half of the colon develops with the small bowel from the midgut, is of large caliber, possesses fluid contents, and has a most important absorptive function. The old saying that "we drink with our right colon" is not an unfounded aphorism. Carcinomas in this segment of bowel are most frequently flattened, ulcerating lesions not encircling the bowel and therefore not causing obstruction. Furthermore, because of the more or less liquid nature of the contents of the colon in this region, an extreme degree of encroachment on the lumen of the bowel must exist before actual obstruction occurs. On the contrary, the distal portion of the large bowel is derived from the rectal portion of the intestine, has a relatively small lumen and its contents are commonly solid. Malignant lesions in this portion of the colon are more likely to encircle the bowel, with the consequent tendency toward the production of obstruction. When the growth is first recognized, some degree of obstruction almost invariably exists, and in a smaller percentage of cases, the first evidence of disease of the bowel is manifested by sudden, acute obstipation. Bearing these facts in mind, one readily understands why carcinoma of the right side of the colon may long be silent or symptomless, or evidence itself by the production of anemia, whereas lesions of the left side make their presence known by bright melena or obstructive phenomena.

HOSPITAL CARE

Of paramount importance in the treatment of patients with carcinoma of the colon is co-operative care by internist and surgeon. Isolation of these patients on a certain floor or wing of the hospital is of material aid in the execution of a definite preoperative and postoperative regimen. That the margin of operative safety is greatly enhanced for these patients by strict adherence in every case to a specified preoperative preparation, cannot be denied. In The Mayo Clinic, our efforts in this field are directed along three main channels: (1) rehabilitation of the patient, (2) reduction of intracolonic pressure in the cases with obstruction, and (3) an attempt to reduce the incidence of peritonitis by the use of intra-abdominal vaccine. When first encountered, these patients usually evidence marked depletion of the bodily stores and physical reserve, associated with loss of fluid, anemic manifestations and generalized toxic reactions. To rehabilitate the patient who is a hazardous surgical risk into one more closely approaching normal, various measures are employed. For this purpose a diet low in residue, but high in calories and readily assimilable, consisting largely of carbohydrates, is of distinct value. A liberal intake of fluid is essential in order to restore the disturbed water balance. If necessary, intravenous or subcutaneous glucose or saline solutions may be utilized. Frequently, single or repeated transfusions of blood are indicated. For the reduction of increased intracolonic pressure, repeated warm saline irrigations, mild purgation in selected cases with a preparation of senna, and occasionally, large, hot abdominal stupes are most efficacious. Satisfactory medical decompression of this type transforms a poor risk into a vastly superior risk at the time of operation. The use as a routine of intraperitoneal vaccine, produced from mixed streptococci and colon bacilli obtained from patients who have died from peritonitis, constitutes, I am convinced, one of the most salient advances in the protection against the development of peritoneal infection following operation. This vaccine, employed in more than 800 cases at the clinic, and carefully controlled with another large series, has been a boon to surgery of the colon. If it is given three days preoperatively it produces a transient sterile peritoneal irritation which fortifies the abdomen against subsequent bacterial invasion. Standardized use postoperatively, is equally desirable. The use of saline and glucose solutions, either subcutaneously or intravenously, election of the opportune time for the oral ingestion of fluids, careful observation, and early detection of any complications, are of primary importance.

SURGICAL TREATMENT

Having prepared the patient in the most satisfactory manner possible, it remains for the surgeon to elect the optimal time for operation. Two additional questions must now be decided: the most suitable anesthetic, and the type of operation to be performed. The choice of anesthetic may vary considerably with the individual surgeon and the exigent surgical facilities, but it has been my experience that a properly administered spinal anesthetic affords generally superior results in the majority of cases. The relatively hemostatic operative field, the ideal muscular relaxation, and the cessation of peristalsis for a period of approximately thirty-six hours postoperatively, are all distinctly advantageous. In some cases, inhalation anesthesia undoubtedly offers a wider margin of safety.

The factors governing the choice of the operation to be performed are so numerous and variable that they can be given here general considerations only. The site of the lesion, the general condition of the patient, the presence or absence of distant metastasis, the extent of the local lesion, the degree of obstruction, and the grade of the lesion are the main factors guiding the surgeon in his judgment for the operation of choice in an individual case. Although routine procedures cannot be practiced without regard for the individual variations confronting the surgeon each time he operates in a case of carcinoma of the colon, certain operative manipulations may commonly be employed in many instances for similar types of lesions. The utilization of graded operations with an intermediary period of rehabilitation has proved to be most desirable. For the ambulatory patient, who is in fair general condition and not afflicted with acute or subacute obstruction, one must vary surgical procedures primarily with the situation of the growth, provided any attempt at radical extirpation is undertaken. For carcinoma of the right half of the colon, we prefer aseptic ileocolostomy with the establishment of an end-to-side anastomosis between the terminal ileum and transverse colon. This procedure is greatly facilitated through the use of a three-bladed clamp. The end-to-side, rather than a lateral anastomosis, is formed; we consider this physiologically and mechanically superior to the latter type of juncture. At a second stage, the remnant of terminal ileum and the ascending colon around to within a few inches proximal to the ileocolostomy may be readily accomplished. Whether this total procedure should be executed in one stage or the extirpation of the growth be postponed as a subsequent operation depends entirely on how the factors involved in the individual case influence the judgment of the surgeon. It is our practice to reserve the radical one-stage operation for the relatively robust patient whose reserve power does not seem materially depleted. Frequently, it may be advisable to decompress the anastomotic sites with an ileostomy of the Witzel type, placed in the terminal ileum, following the one-stage operation. Less commonly is this safety valve needed following primary ileocolostomy. If it is decided, as in somewhat more than half of the cases, that ablation of the carcinoma should be accomplished in two stages, the interval between the first and second stages should be considerable, usually about six weeks. At the second operation the right half of the colon is readily mobilized and removed in toto, including the attached portion of terminal ileum, to within a few inches of the previous anastomosis. The blind end of the transverse colon is inverted, and as an additional factor of safety, may be pulled up into the wound so as to extraperitonealize the stump. The peritoneal cavity is thus protected against any possible contamination, should leakage occur.

Distal to the hepatic flexure and down to the lower third of the sigmoid, an obstructive resection is the operation of choice in the absence of any appreciable obstruction. The growth is removed at the primary operation, and the two barrels of bowel are obstructed with a three-bladed clamp; the same instrument is employed in performing an aseptic anastomosis. The blade on the proximal loop is released after forty-eight to sixty hours, or when distention with gas, ballooning or nausea necessitates its removal. The clamp is left on the lower loop until it falls off, usually after six to eight days. Subsequently, an enterotome is utilized to destroy the spur of the resultant double-barreled colostomy, which will then usually close spontaneously following a period of three weeks unless the mucosal margins are everted over the cutaneous surface, in which event deliverable extraperitoneal closure is indicated. This operation embodies the desirable features of the Mikulicz operation without its high mortality and subsequent tendency to recurrence in the skin. We have carried out this procedure in a large number of cases with a mortality of 5 per cent, and find it increasingly satisfactory. Only in rare instances do we consider primary resection with end-to-end anastomosis justifiable, and then only when supplemented by cecostomy or enterostomy. Likewise, we seldom utilize the original Mikulicz operation, and then only because of extenuating circumstances. If obstruction exists, one must resort to preliminary surgical drainage, either by cecostomy or colostomy proximal to the growth. Subsequently, following adequate colonic decompression and drainage, resection of the lesion may be accomplished and anastomosis performed. With adequate and proper medical preparation prior to operation, this procedure is seldom necessary except in the treatment of the acute obstructive case. In this event, immediate surgical decompression of the colon is indicated, preferably by blind cecostomy without exploration. To temporize in the face of acute colonic obstruction, when medical measures are not at once effective, is an act of folly of which not even the most veritable tyro should be guilty.

Except in the acute case, abdominal exploration prior to the decision for or against any type of operation in any part of the colon is essential and should be carried out in a definite and routine order as follows: (1) the liver; (2) the aortic glands; (3) the glands at the bifurcation of the mesenteric vessels; (4) the pelvis, and (5) the growth and its adjacent lymphatic structures. Postponing examination of the growth until the last is the important point. At this time one determines: (1) its extent; (2) any coexisting complications, such as abscess, perforation, and so forth; (3) the mobility, and (4) involvement of adjacent lymphatic channels and nodes. Gentleness is the keyword in palpation of the growth. If one possesses all the information contributed by this systematic exploration, and bears in mind the general status of the patient, one is in a position to elect the most desirable surgical procedure for the individual case.

The mortality rate in surgery of the colon has yielded quite materially with adherence to the general surgical principles and co-operative treatment as outlined. A consideration of the statistics of mortality of surgery of the colon necessitates a simultaneous study of operability, as the intimate relationship between these variables cannot be denied. As one increases or decreases, the other does likewise. In 1930, the operability at The Mayo Clinic was 57.5 per cent. During this time there were 755 patients subjected to operation, largely for carcinoma, with a mortality of 8.6 per cent. In 1931 the mortality in 712 cases was 9.1 per cent. In 1929 the mortality for lesions of the right side of the colon was approximately 1 per cent higher (8.7 per cent as compared with 7.4 per cent) than for the lesions distal to the middle portion of the transverse colon. It has been our constant effort to broaden the scope of operability in an endeavor to afford the patient who is a poor risk some opportunity of cure. As W. J. Mayo said many years ago, if the mortality rate for surgery of the colon is decreased much below 10 per cent, many patients have not been helped who might have been benefited by surgery.

THE ART OF HEALING AND THE SCIENCE OF MEDICINE*

C. P. Fox, Sr., M.D., Greeneville

No one who has lived very long and is an acute observer could have failed to be impressed with the imperfections of human knowledge and its changing dogmas and that the truths of yesterday are the fallacies of today to be rediscovered tomorrow, only to be lost again in the maze of what we call progress, until we are led to question, "What is truth?"

Someone has said, "since the most that we know is probably untrue, what is human knowledge but a riddle of ideas in a universe of mystery until we are almost ready to exclaim with the pessimistic poet:

> "The world is all a fleeting show,
> For man's illusion given,
> Deceitful shine, deceitful glow,
> There's nothing true, but heaven."

Out of this dilemma I have aroused myself to the conviction that there has always been some truth in much that we have discarded as false and that after an orgy of speculation in new theories and hypotheses, the invention of fertile imaginations spurred on by competition and desire for glory, we will ultimately come back to find some of the truths which we have discarded are fundamental.

No one can study the history of the ages without being impressed that there is really nothing new under the sun and that many of the things which we call modern and glorify as new discoveries were even better understood in prehistoric ages. The are simply truths that have been lost and rediscovered. There is evidence in archaeology of ancient civilization, which challenges much of our present day arts, our laws and our modern science. Certainly none of the truths which we seem to be discovering are creations of our present civilization. They are only old truths newly discovered.

Forty years of experience and observation has convinced me that, although we have made great strides in the science of medicine, we have lost something of the art, which is after all the chief end to which the profession should aim. With this thought in mind, I have endeavored in this address to portray some of the qualities of thinking which distinguish the masters of the old school, that has immortalized them in the annals of history and left to us a heritage which we should sacredly guard, that our profession may not degenerate into a guild of pure mechanics.

Although the art of healing is based on the science of medicine, the most scientific doctor is by no means always the most successful practitioner, neither is the most successful doctor usually the most scientific. Although this statement seems paradoxical, observation will prove that it is true. Scientific reasoning often seems to lead to one conclusion while experience leads to another. Why then is this conflict between science and practice? Science deals only with the physical and mechanical and leaves out of consideration the spiritual, while experience deals with both the physical and spiritual.

Viewed from the scientific standpoint, the living human body presents the most complex, as well as the most perfect, chemical laboratory, which defies man's imitation, while the dead body yields to the simplest chemical analyst. Why then is this difference? In the dead body we have all the organs, tissues and material which we have in the living, the one thing lacking is that intangible thing which we call life.

This is the motive power, the intelligence operating through the mechanism of the body that moves it to function and elaborate its organic chemical compounds and develops its energies and carry on its functions, which challenges the scientific imagination and defies imitation. It is this mysterious thing which science cannot analyze nor interpret that bars scientific reason and theory and leaves us stranded in a materialistic universe unless we have the vision to lift us beyond materialistic reason into the spiritual universe. It is this failure to recognize the spiritual and look beyond the physical that accounts for the failure of the scientific doctor and explains the success of the practical doctor.

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*Read before the Blount County Medical Society.

The teaching of medicine today may be said to be ultra-scientific. It is looking too much to the mechanical and leaving out of consideration the personality, which is expressed only in the living phenomena and not in the physical mechanism of the patient in the treatment of the sick. It is emphasizing the science and ignoring the art. The modern doctor is making his diagnosis in the laboratory instead of at the bedside. He is forgetting that in the sick he is dealing with a dual personality, a physical and a spiritual; that each reacts upon the other and while he can carry the urine, the blood, the spinal fluid or a bit of tissue to the laboratory and analyze it, he cannot carry the soul, the life, the intellect there, and the study of the one without the other must often lead to erroneous conclusions.

It is not the purpose of this discussion to speak disparagingly of scientific training. Although educated and trained in the older school of practical medicine, I am by no means blind to the great value of modern scientific methods in the study and treatment of disease, but I am firmly convinced the pendulum is swinging too far to the scientific side, to the neglect of the practical side and the modern doctor is losing the art of the treatment of the sick. His eyes are fixed too much on the microscope, the x-ray and the clinical reaction and too little on the patient. He is not being taught to correlate the pain, the posture, the facies, the skin, the tongue, the mental condition, etc., that meant so much to the practitioner of former days.

There is a lot in the understanding of disease and the treatment of the sick that has never been written and can never be written or expressed in words. The eye, the ear and the touch must be tuned to the discords of nature. It must be learned at the bedside. It cannot be seen or heard or handled in the laboratory. It must be acquired by patient and painstaking study at the bedside. It is the talent developed by the true clinician.

I might roughly illustrate it by the motor car. There is trouble with my motor. I drive it into the garage. I notice the first thing the skilled mechanic does is to start the motor, if it will start, and listen intently to the sound, I might say, the voice of the motor. His ear detects any discord in the rhythm, which leads him to the source of trouble. Then his knowledge of the mechanism leads him to look at the place where this discord is produced. He may know nothing of the chemistry of its crank case, its cylinders or its pistons or the tensil strength or hardness of the metal or the chemistry of the gas, but he knows by experience and observation the mechanism of its operation and with his trained ear and eye he detects the trouble.

In the study of disease it is important to know the chemistry of the human body and its mechanism and its variation in disease, but if it were possible to know all these, without a broader knowledge of the clinical manifestation of signs and symptoms only to be seen and interpreted at the bedside, a doctor will have poor success in the treatment of the sick. The posture, the gait, the expression of the face, the color of the skin, the reflexes, the muscular contractions or relaxations, the subjective symptoms of pain, anaesthesia, hyperasthesia, dryness or moisture of the skin and tongue, the mental state of excitement or depression, drowsiness, hebetude, anxiety, fear or calmness, confidence and optimism meant much to the clinician of the past and he was able to interpret them and they should mean as much to the real doctor of today, but modern teachers are losing sight of them. They see the human body only as a machine which can be carried to the laboratory and studied only in its physical manifestations and are losing sight of that intangible, but dynamic thing, which is the energizing part, the life or soul, which cannot be studied in the laboratory.

It is difficult to find an illustration to convey the thought which I wish you to get. But let me take for example my arm, made up of bones, muscles, nerves, blood vessels, tendons and joints. With it I pick up a stone, throw it a hundred feet in the air. If I asked you what force caused the stone to rise a hundred feet, you would say muscular energy. I cut the arm loose from the body. All the mechanism of the arm is still there, but it has no power to pick up the smallest pebble and cast it away. The mechanism is still there, but the energy is gone. It is this vital thing in the human body, the life, the soul, that cannot be left out of consideration if we will understand and successfully treat its abnormal manifestations in disease. This finds its expression in the manifestations of life and function and can be studied and interpreted only at the bedside. And a clear understanding of these manifestations and a proper evaluation and correlation of these symptoms with the laboratory findings will always distinguish the successful doctor from the mediocre and the quack.

The thoughts expressed in this paper were not inspired by any lack of appreciation of the values of the scientific advances in medicine. As I believe few men living in the profession today can appreciate these more than I, as I have had the opportunity for more than forty years to observe its progress, and its transformation has been so marvelous that none except those who have seen it would believe it. But in this age when men are fixing their eyes on the material and mechanical and so-called scientific, they are losing sight of and touch with the spiritual and the tendency is to be swept in with this tide to the extent of degeneration into a purely mechanical science and losing the beautiful and inspiring truths that have always distinguished it from a trade or profession and elevated it to a calling to human service.

That the old honored clinician is passing cannot be denied and it is he who has held the profession to its traditions and when he is gone there is danger that the love, reverence and admiration of the people for the profession of medicine will be gone. The modern doctor is not commanding the love and the faith that the old doctor enjoyed and which was such a large factor in the successful treatment of the sick. His diagnosis is most often made from a brief history obtained by a few suggestive questions from an interne and a laboratory report, rather than by a patient, painstaking bedside study. Subjective symptoms and thorough physical examination by the doctor is the exception rather than the rule. The temperament and psychology seldom enter into consideration. And yet the trained and experienced clinician knows that if allowed to give a complete and uninterrupted history, the patient will often make the diagnosis for him.

My appeal is not for less scientific accuracy in the use of the laboratory and instruments of precision, which are not only valuable but indispensable in confirming the clinical diagnosis, but should not be depended on to the exclusion of bedside study of disease.

One of the greatest assets of the doctor in the cure of his patients is the confidence which his patients acquire only by a patient and tactful contact that inspires faith and hopefulness and without which any attempt at treatment will be most disastrous to the patient's welfare and the doctor's reputation.

The point then is to be scientific, but not ultra-scientific to the exclusion of the practical. A quiet, confident, tactful sick room presence, a gentle touch and soft reassuring words, expressive of sincere interest will often do more to sooth the patient's anxiety and bring assurance and renewed courage than any drug. The real doctor cures most of his patients with the simplest remedies largely by suggestion, while the charlatan or quack kills with over treatment.

The reassuring atmosphere of a well conducted hospital where the patient is separated from the anxiety of relatives and friends, where the energies can be conserved by rest and proper regulation of diet, etc., is the greatest advance in modern medicine and is doing more to rehabilitate the ill and cure the sick than any drug or other therapeutic agent and the time will soon come, if it is not already here, when every case of illness will seek the hospital that can meet the standard of efficient service, that will inspire the fullest faith, not only in its efficiency, but in its devotion to the welfare and comfort of its patients. Its service must be kind and sincere and there must be "entente cordiale" between the doctor and the nurses and the patient.

Realizing this as an essential in hospital service many modern hospitals are being constructed and furnished so as to give them a more attractive and homelike appearance. The walls are finished in attractive colors, the furniture selected both for comfort and beauty. The service is being organized so as to bring not only intelligence but kindness and confidence to the patient. Nurses are being selected not only on account of their better education, but for attractive personality. With such an environment, the doctor's responsibility is not lessened, but his work is simplified and he can go forward with assurance of success, unhampered by an environment of fear or anxiety, which are so depressing to the sick, but with every agency at his hand to promote his efforts to bring his patient back to health.

To illustrate the points I have tried to make in this paper, I might recite innumerable cases as they occur to me almost every day in my work, but a report of one very recent case will be sufficient. This case came under my observation since writing the first part of this paper and was not in mind when the thought was conceived.

The patient was a young married woman, twenty-seven years of age, who was brought to us one night about ten o'clock with the following history: About three weeks before while riding in an automobile she was in an accident and received a severe bump on her head that stunned her, but did not render her unconscious. For several days following she suffered no inconvenience from the injury. Then she began to have headache and pains in the neck radiating to her shoulders. She became nervous and could not sleep. Her appetite failed and she grew weak, but continued to go about and do some work. One week before she was brought to the hospital, she called at a doctor's office and he found her with a temperature of 103. He gave her some medicine, but she did not get any relief to her head and continued to grow weaker. One week later she called another doctor, who found her with a temperature of 104 and a pulse of 140. The doctor brought her to the hospital the same night.

On examination the first thing that attracted our attention was a large thyroid gland, a rapid pulse and temperature of 104. There was definite pulsation in the gland, a throbbing in the vessels of the neck. There was also a loud precardial heart murmur. There was flush about the neck and face and a definite tenderness over the thyroid. The patient complained of some choking and dyspnea. She gave a history of a large gland since childhood, but no symptoms of hyperthyroidism. The gland had apparently increased rather rapidly in size during the past two or three weeks. There was no exopthalmous.

The picture of thyroiditis with toxic thyroid seemed to be complete, yet there was an expression of hebetude or mental dullness. Answers to questions were slow and rather listless. There was no fibrillary tremor of fingers or tongue. There was marked dullness of hearing. There was abdominal tympany and some tenderness in lower right quadrant, no rigidity. A basal metabolism was taken the following morning and was plus 36. The laboratory report was as follows: Urine: voided: reaction, acid; specific gravity, 1010; albumin, two plus; sugar negative. Microscopic: Leukocytes (10) ; no casts. Blood count: Erythrocytes, 3,810,000; leukocytes, 5,900; HEG. 71 per cent; small lymphs 29 per cent; Kahn, negative.

The diagnosis of toxic adenoma with thyroiditis was made, but there were clinical manifestations that could not be accounted for with this diagnosis. History revealed this patient had not had typhoid fever and had not been immunized. The mental condition and the abdominal symptoms suggested typhoid. A Widal was done and was positive, also a blood culture was made and was positive. Rose spots developed and the patient ran the typical typhoid course. The thyroid symptoms yielded to Lugol's and digitalis. Had this case been studied only in the laboratory and not carefully at the bedside, the typhoid would have been overlooked. The diagnosis was made clinically, the laboratory confirmed it.

No matter what the laboratory says, if it will not correlate with the history and bedside findings, it is better to take the clinical than the laboratory. I do not say this, however, in criticism of the laboratory. On the contrary I would not know how to get along without it, but my purpose is to discourage the tendency of stressing the importance of the laboratory to the neglect of the bedside study.

The modern doctor has his eye on the laboratory and too little on the patient. The chemical laboratory and the x-ray makes his diagnosis and too often his prognosis and how often is he sadly mistaken in both. The surgeon who accepts this diagnosis will soon find to his chagrin the fallibility of machine-made diagnosis.

A well taken history, a searching eye, a patient and well-trained ear and an educated touch will tell the trained clinician secrets that no laboratory can reveal. Science has given us many innovations that are most helpful, but science alone cannot supplant or even subordinate the senses, trained in the school of experience for an astute mind. The ends of the fingers of a good doctor often have more intelligence than all the combined faculties of the mediocre. Many diseases may be diagnosed by what might be termed the intuitive sense of the acute clinician.

When I was a student at the University of New York, we had a professor of clinical medicine who I have seen walk through the wards of Bellevue and pause at a bedside and without taking a history or touching a patient that he had never seen before, make a correct diagnosis that had puzzled the staff for days. How did he do it? He had cultivated to the highest degree the art of observation; facial expression, color of the skin, posture, breathing, voice, pulse, tongue, etc. All had a significance that the average doctor today misses, because he has not trained himself to observe them. How had he acquired them? By thoughtful bedside experience. One of the hobbies of one of the world's greatest surgeons was the educated touch.

Times without number the touch alone has told me when to open an abdomen, blood count and other laboratory findings to the contrary. The surgeon of experience has only to recall the number of times he has opened an abdomen with some severe pathology, as a gangrenous appendix, duodenal ulcer, gangrenous gall bladder, acute pancreatitis, perforated viscus, etc., in which the patient's temperature was not elevated, the blood count was within the normal range and the pain had subsided or was absent. There was no vomiting and only a sense of touch told him a catastrophe had happened or was about to happen in that abdomen.

This trained sense of touch is not alone important in the diagnosis of acute abdominal conditions. It is by far the most important in the diagnosis of pelvic diseases both in men and women and in the diagnosis of tumors both in the cavities as well as on the surface. It tells you better than any other diagnostic means not only the presence, but the nature of a tumor, whether it is solid or cystic, malignant or benign, inflammed or not.

For many years I have had a large number of cases referred to me by many doctors for diagnosis in which the diagnosis was comparatively easy and should have been made by the doctor, but in which he failed wholly because he did not use or had failed to educate those common senses which he possessed.

Few practitioners today know what is meant by a Corrigan's pulse, or its clinical significance, or could recognize a Corvisart's, Hutchinson's or Parkinson's facies, or an Oppenheim's gait. How many ever look at the tongue and know anything of its diagnostic or prognostic significance? How many know how to interpret position and gait or examine the reflexes and interpret them in clinical values.

Dr. Osler once had a patient walk across the room before a class and asked them to name the malady. "Paralyses angitans", answered one. "How do you know?" inquired the doctor. "I have seen it before," was the reply. This illustrates the thing I am trying to bring to you. No text book could have drawn a picture so accurate that this student could have recognized the disease so readily as having seen it.

For some years I have had young doctors associated with me in practice. They are well educated and highly trained. A patient comes into my office. After a casual observation I make a snap diagnosis. I send the patient to the young doctor for examination. After a careful study he is uncertain about the diagnosis. When I tell him my diagnosis, he says, "How did you know?" The answer is, "I have seen it before." Go down the street and look for a man who has been accurately described to you, but whom you have never seen. How uncertain you are of the identity of the man. Let a friend take you down and introduce the man and the next time you see him you will recognize him. Can you tell me how you do it? Your only answer is, "I have seen him before."

Not only our conscious, but our subconscious observation is enlightened by experience. Years of experience and observation brings to the doctor something he can never acquire from a textbook. But the observation must be an intelligent, trained observation at the bedside. My criticism of the medical teaching of today is not too much laboratory, but too little bedside. Let your laboratory confirm your bedside observation.

INVERSION OF THE UTERUS

G. W. SMITHER, M.D., AND V. D. HOLLOWAY, M.D., F. A. C. S., Knoxville

THIS is a condition concerning which there are no authorities. Its occurrence is given as one in two or three hundred thousand cases. In St. Petersburg there is no case recorded in over two hundred and fifty thousand deliveries; in Dublin there is one case in two hundred thousand deliveries. Few, even among those who are specializing in obstetrics, have seen a case.

Inversion may be spontaneous or traumatic; that is, it may be produced by intrinsic causes or from outside interference. For its occurrence there must be a relaxation of the uterus with certainly marked relaxation of the fundus. In certain cases a contraction of the lower uterine segment seems to draw down an indented and flabby fundus, resulting in inversion some hours postpartum. This would be an intrinsic cause; and, of course, the commonest outside cause is given as traction on the cord in an attempt to deliver the placenta. Such conditions occur, of course, immediately after delivery, or where there is a polypus, the expulsion of which has in certain cases resulted in inversion of the uterus.

We may have any degree of inversion, from the dimple to a complete turning inside out with protrusion from the vulva. There is certainly some peculiar state of relaxation of the uterus with an irregular muscular contraction of the uterine wall. The inversion is a condition which causes most alarming symptoms. Subjectively, the patient has sudden tearing pain, profuse hemorrhage, and goes into severe shock. The extreme condition of the patient is out of proportion to the amount of blood lost. This additional shock is likely due to traction on the peritoneum, which in complete inversion must be considerable. Objectively, a hand placed in the abdomen finds an absence of the fundus, and a vaginal examination reveals a bloody tumor covered with mucous membrane and bleeding freely. This condition has been mistaken for a polypus, and there are cases on record where forceps have been applied to the mass. If the patient survives the acute stage, with its hemorrhage and shock, then ulceration, bleeding, sloughing, and exhaustion may lead to a fatal termination weeks or months later. Some authors describe chronic inversion of the uterus, diagnosis of which is made by finding the mass filling the vagina or protruding from the vulva. Gross and fatal mistakes have been recorded from errors in diagnosis or treatment. The inverted uterus may contain loops of bowel, adnexa, or bladder, and in cutting this mass away all of these have been injured.

Prognosis is always grave in these cases.

Treatment is to combat shock and loss of blood, control bleeding by packing, transfusion, and, after the patient reacts, under general anesthesia (ethylene preferred) an attempt should be made to replace the uterus. If this fail, in our opinion, the best approach is by the abdominal route, where the inversion can be replaced with greater safety than by any other method, as the contents of the uterus can be removed, the bladder carefully protected, and if the inversion ring cannot be dilated sufficiently to replace the uterus, the posterior uterine wall can be divided from within the inversion, after which the uterus is easily replaced, and the incision can be repaired or hysterectomy performed, as the condition may indicate.

We wish to report the following case:

Mrs. R. F. J., age 22, a primipara, was admitted to Riverside-Ft. Sanders Hospital on the morning of May 13, 1931. Dr. Smither delivered her at 2:05 p. m., using low forceps and a right episiotomy, the position of the baby being R. O. A. The placenta and membrane were delivered without difficulty, and the uterus was firmly contracted and seemed in every way normal.

At 3:45 p. m. the nurse phoned that the patient was bleeding, and that she had given pituitrin, 1 c.c. She phoned again in a short time that the patient had had severe pain, profuse bleeding, and was pulseless. Dr. Belo Stone rendered first aid, giving 1,000 c.c. of ten per cent glucose intravenously, and the same amount of saline beneath the breast; caffein sodium benzoate, ephedrine were given and also one-sixth grain morphine to control restlessness. The vagina was packed with four per cent mercurochrome gauze, and no mass was noted in the vagina. Four hours later the patient was again pulseless, and as a donor had been secured and properly matched, 500 c.c. of whole blood were given by the multiple syringe method, and additional packing was placed in the vagina, and a tight T-bandage was placed to give the packing support. The patient was much relieved by the transfusion.

Eighteen hours postpartum the packing was removed, and a bloody mass appeared at the vulva. Packing was placed about the inverted uterus, and the patient was kept absolutely quiet. Three days later, May 16, 1931, under ethylene anesthetic, we attempted to replace the uterus. The ring was easily felt, but all attempts at replacement failed. Four per cent mercurochrome was injected all around the tumor mass, and it was packed with sterile gauze. Her hemoglobin was 45 per cent, red blood cells 2,500,000, leucocytes 17,000, polys. 89 per cent, transitional 3, large lymph 8. Her highest temperature was 102, which developed the third day. On the seventh day postpartum her temperature was normal. She was discharged from the hospital on May 25th, being the twelfth day after delivery, with no hemorrhage and the vagina still filled with the inverted uterus, which could be seen at the vulva. She was carefully taken care of at home and gained rapidly until June 28, 1931, when a profuse hemorrhage developed. The vagina was tightly packed, and she was again brought to the hospital. Her hemoglobin at re-admission was 48 per cent, red cells 2,700,000, and leucocytes 10,700. On June 29th, 1931, she was given 500 c.c. of whole blood.

On June 30, 1931, she was removed to the operating room, and an attempt, under ethylene, to replace the uterus caused profuse hemorrhage. A midline incision was made. Both ovaries were just at the ring, the tubes being well drawn in, and the bladder partially drawn in. The ring was manually stretched by use of a tenacula and Allis forceps grasping the uterine wall, and with an assistant's hand in the vagina, further attempt was made to replace the inversion; but this could not be done. The method of Irving and Kellogg was also a failure. When a finger was passed inside the inversion, the uterus was divided along the posterior surface and easily replaced. The fundus presented so much necrosis that a supravaginal hysterectomy was deemed advisable. This was done, leaving the tubes and ovaries and supporting the cervix as usual. One piece of rubber tissue was placed through the cervix into the vagina. Had this uterus not been necrotic, it would have been an easy matter to have closed this incision into the uterus and left this patient with a functioning uterus. She was given, before leaving the operating room, 1,000 c.c. saline intravenously, with five drops of adrenalin, and immediately given, by rectum, 1,000 c.c. saline at 110 degrees F., containing tincture digitalis two drams.

Her postoperative course was uneventful. At the end of twenty-four hours her temperature ran to 102, pulse 100, respiration 18. On the third day her temperature was normal, pulse 100, and her general condition fairly good, except for a feeling of extreme weakness. At her request she was given another transfusion of 600 c.c. of whole blood. She then made a rapid recovery; her incision healed primarily; and she was discharged from the hospital on July 13, 1931, her thirteenth day postoperative.

At her six-weeks postoperative examination, made at the office, she was in excellent condition, color good, cervix well supported, and she had no complaints.

This case undoubtedly developed her inversion some hours postpartum, as she was examined postpartum by both Dr. Smither and Dr. Stone, and the uterus pronounced well contracted, and nothing abnormal was found. We concluded:

First: That in this uterus, and probably in other inversions, there is an abnormal state of the uterine musculature with a flabby relaxation of the fundus.

Second: That pulling on the cord, which certainly played no part in this case, would not likely result in inversion in a normal uterus. However, we feel that it is a bad practice, for, as a rule, if a placenta is let alone until the cord is seen to slide down a few inches, very little effort on the part of the obstetrician or the patient, by kneeding or bearing down, is required for expulsion.

Third: In such cases, in the hands of a competent surgeon, the abdominal route is far the safer approach, as the contents of the inverted uterus are then ascertained, and hemorrhage can be prevented, as well as injury to important pelvic structures.

ENDOMETRIAL BIOPSY BY SUCTION*

JOHN C. BURCH, M.D., AND HAROLD H. KLINGER, M.D.

THE well known principle of needle puncture and aspiration in obtaining tissue from deep seated lesions has been extensively used (1). The application of this principle to the endometrium has seemed desirable to us. In the clinical study of the disorders of menstruation, the state of the endometrium at the various phases of the disordered cycle is of utmost importance. The lack of an easy method of obtaining tissue from the human uterus has done much to delay investigation in this field. Formerly, it has been necessary to dilate and curette in order to obtain a specimen for study. In most clinics this necessitates an anaesthetic and hospitalization, so that it is rarely possible to follow the endometrial cycle of a patient from week to week.

In searching for an easy method of obtaining tissue from the uterus, we have, by a process of gradual evolution, found one that can easily and safely be carried out in the office or out-patient clinic. The method is extremely simple, and causes the patient no more pain than the insertion of an ordinary uterine sound.

The patient is placed in the lithotomy position. Cervical exposure is obtained by a bi-valve speculum. The external os is cleared of mucus and painted with mercurochrome. The cervix is gently grasped with a tenaculum. A curved uterine canula with a hole at the end and two on the side is gently inserted into the cavity and pressed against the wall of the uterus. Suction is then made by an attached syringe and the canula withdrawn for about one-half inch. The suction is released and the instrument is re-inserted until it again comes in contact with the wall of the uterus. The process is then repeated and the instrument withdrawn during continuous suction. The tissue, which has collected in the lumen of the canula, is washed out with formalin solution. One is agreeably surprised to find how much tissue has been obtained.

The method has been extensively used in our out-patient department and has invariably proved satisfactory.

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(1) New Technic and Instrument for Obtaining Biopsy Specimens: William J. Hoffman, American Journal of Cancer, v. xv., January, 1931, No. 1, p. 212.

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AFFECTIONS OF THE COMMON BILE DUCT*

WITH SPECIAL REFERENCE TO SURGICAL MANAGEMENT

R. B. White, M.D., Jackson

ALL lesions of the common bile duct are essentially obstructive in nature. With obstruction of the extra-hepatic ducts there is bile stasis, and in many instances, associated infections with resulting serious hepatic damage. It is not within the scope of this paper to discuss the various pathologic changes and the disturbances in the physiologic activity of the liver brought about by the obstruction of the common duct. Rather, I shall discuss in a general way, the various types of lesions encountered, the symptomatology and treatment, and the pre- and post-operative care of patients with these lesions.

Affections of the common bile duct may be divided into four groups:

1. Choledocholiathiasis.
2. Benign strictures.
3. Malignant strictures.
4. A miscellaneous group which includes such conditions as chronic pancreatitis, suppurative cholangitis, and benign tumors.

The clinical symptoms of obstruction of the biliary passage are characteristic and distinct. Icterus, staining of the secretions, bile pigment in the urine, clay-colored stools, pruritis, and a delay in the coagulation time of the blood with consequent tendency to hemorrhage. Pain, chills, fever, and leucocytosis are variable. Gastro-intestinal disturbances with nausea, anorexia, and loss in weight and strength, are common.

Jaundice is the most significant single factor in mechanical obstruction to the passage of bile through the extra-hepatic bile ducts. Every surgeon is aware of the great problems encountered in the treatment of jaundiced patients. The outstanding danger is the frequent hemorrhage following operation. Walters, in the study of obstructive jaundice, found that more than 50 per cent of the post-operative deaths were accompanied, if not directly due to intra-abdominal hemorrhage. The treatment of all obstructive lesions of the common bile duct is directed at thorough pre-operative preparation of the patient and to establish adequate drainage of bile. This is done through the regular biliary channels after a stone or stones have been removed from the duct or through an anastamosis made between the distended portion of the biliary tract and the intestines for relief of benign or malignant strictures of the common bile duct.

PRE-OPERATIVE PREPARATION

The greatest single factor in lowering the mortality rate in the cases of obstructive jaundice has been the careful pre-operative treatment. All patients with common duct lesions should be carefully studied before any operative procedure is carried out. There is never any excuse for carrying out a hurried or emergency operation in these cases. An estimation of hepatic function is very important. The methods now at our disposal do not measure in any case of hepatic injury all of the hepatic function. For the clinical evaluation of the disease before operation we are dependent on data that concern only a few of the important phases of the metabolism of the liver; namely, those of excretion of bile and coagulation of blood. The most valuable test, and the one offering the best index of hepatic function in the presence of obstructive jaundice, is the estimation of the level of serum bilirubin. As emphasized by Judd, "to know the amount of bile pigment in the blood of a jaundiced patient is more important than to know the coagulation of the blood." McVicar has shown the value of repeated determination of bile pigment in the blood stream. Experience teaches that the propitious time for operation is when the pigment has reached a more or less constant level in the blood, and not while fluctuating. Certainly no operation should be undertaken during the time the serum bilirubin is increasing. Reading of coagulation time should be done frequently before surgical intervention in jaundiced patients. However, unfortunately, it does not always serve as a reliable index of the hemorrhagic tendencies. Linton has shown that patients with obstructive jaundice who have a slow sedimentation rate are unlikely to bleed post-operatively, while those of rapid rate, in the absence of fever, are apt to bleed. He feels that the sedimentation rate of the blood is a more reliable test of the hemorrhagic tendency than the determination of the coagulation and bleeding time.

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*Read before the West Tennessee Medical Association, McKenzie, May 21, 22, 1931.

In preparing the patient for operation, measures for the prevention of post-operative hemorrhage, to combat toxemia, to prevent dehydration, and to protect the liver function, are instituted. This consists of repeated intravenous administration of calcium chloride, blood transfusion, intravenous infusion of glucose in 10 per cent concentration, a high carbohydrate, low protein and fat diet, and a fluid intake of not less than 3,000 c.c. daily. Of the above measures, I feel that the most important single one is free use of glucose intravenously and a high carbohydrate diet. Perhaps the most significant function of the liver is the regulation of the sugar content of the blood. The glycogen content of the hepatic cells is almost always reduced in hepatic disease. Mann and Bollmann, in the experimental work on degeneration of the liver, brought about by the administration of carbon tetrachloride and partial hepatectomy, have found that the animals remain in a fair degree of health provided they were fed on a diet of milk and corn syrup. Whereas, if they were fed on a normal meat diet, they soon died. Observing this work in their laboratory, I felt that it had a practical clinical application. About three years ago, I introduced, on the surgical service of Dr. Judd, the practice of prescribing high carbohydrate, low protein and fat diets with two to four ounces of corn syrup and milk with each meal; for all patients with cirrhosis of the liver, and all jaundiced patients, with very gratifying results. I feel that the free use of glucose and diets high in carbohydrates is the most valuable aid in the treatment of cases in which the liver is damaged from obstruction of the extra-hepatic duct.

STONE IN THE COMMON DUCT

Colic is the most significant single factor of common duct stones. A given patient with jaundice, a history of colic, gaseous dyspepsia, and qualitative food intolerance, one is reasonably certain in making a diagnosis of stone in the common bile duct. The chief characteristics are the intermittent nature of the attacks, and the site of pain in the upper part of the abdomen. In all cases of calculus, there is associated cholangitis. Fever, chills, and leucocytosis are indicative of infection in the biliary tract. Jaundice is frequently the symptom which induces the patient to seek relief. There is oftentimes a history of repeated attacks lasting from a week or two to several months. The jaundice, as a rule, is fluctuating, and frequently disappears while under observation. The intensity of the icterus varies considerably. Weir has shown that about 13 per cent of cases with common duct stones give a negative history of jaundice, and that 5 per cent do not have colics. We are confronted, then, with a goodly number of patients that give no clinical evidence of stones of the common duct, therefore, it behooves every surgeon, when operating on the biliary tract, to carefully examine the common duct. In the majority of cases stones in the common duct can be felt, yet a single stone, floating in the ampulla may be overlooked unless the duct is opened and explored. Certainly when one encounters dilated duct with no clinical evidence of stone, or no demonstrable lesion to account for it, the duct should be opened. In cases in which no previous operation on the biliary tract has been performed, a diagnosis of a common duct stone is usually not difficult, but in patients with recurrent symptoms following the removal of the gall bladder, or some operative procedure on the extra-hepatic ducts, the differentiation from stricture or other lesions of the common duct, is not always easy. It is the general concensus of opinion that the recurrent stones in the common duct, are stones that were overlooked at the time of operation. However, there is not much doubt, that in certain instances, stones will reform in the hepatic or common duct following cholecystectomy. The results following removal of stones from the common duct, are as a rule, excellent. If the patient has no jaundice at the time of operation, and there is only a slight degree of cholangitis, hepatitis or cirrhosis, drainage of the duct with a Mayo-Robson tube following the removal of stone, is the procedure of choice. In cases with marked cholangitis, biliary cirrhosis, and long standing jaundice, and especially in patients with recurrent stones in the common duct, prolonged drainage of the duct should be instituted. This is best accomplished by utilizing a Kehr-Deaver T-tube. The tube should be left in place from three months to a year, depending upon the degree of infection and the biliary cirrhosis present.

The following case is illustrative of stone in the common duct. A brief review of the history will be given. The patient, a woman age 75, came to the clinic December, 1930, complaining of jaundice, chills, and fever. Twenty-five years ago she had an attack of gallstone colic without jaundice. One year ago, she had colic, chills, and fever lasting a few days. In August, 1930, there was a third attack, manifested by upper right quadrant discomfort, associated with slight jaundice. Following that attack, she had had intermittent spells of jaundice, accompanied by itching and fever. On admission to the hospital she was deeply jaundiced, the urine contained a large amount of bile, the stools were clay-colored, and itching was very intense. There were also fever, chills, and sweats. The serum bilirubin was 12 mgm. per 100 c.c. of blood on repeated readings. The coagulation time was 7 minutes. The blood urea was 34 mgms. per 100 c.c. of blood. The patient was prepared for operation by repeated intravenous administrations of calcium chloride, intravenous glucose, and a high carbohydrate diet. Fluids were given in amounts up to 4,000 c.c. daily. On exploration there was found a small contracted, thick-walled gall bladder, containing several small stones. The gall bladder was tightly adherent to the colon, making dissection very difficult. On exposing the common duct, it was found to be markedly dilated, its walls thick, and contained a single stone, 2½ by 1½ cm. in size. The stone was removed; the duct was explored with the finger, and a T-tube stitched into it. The gall bladder was drained. The patient's convalescence was smooth, with the exception of a troublesome diarrhea, which ensued about 12 days post-operative. This was thought due to the lack of bile in the intestines. All the bile that drained from the tube was collected and introduced into the stomach through a Rehfuss tube. This controlled the diarrhea promptly. She was discharged from the hospital three weeks after operation, free from jaundice. The serum bilirubin on dismissal, was less than 2 mgm. per 100 c.c. of blood. Lipiodol was injected into the T-tube under fluoroscopic control. The common and hepatic ducts were well visualized, and the oil was seen to escape from the duct into the duodenum, thus assuring us that the duct was patent. She was instructed to clamp the tube for 16 hours and to allow it to drain for 8 hours in each 24. The tube was removed three and a half months subsequent to the operation. From a recent questionnaire, this patient states that she is enjoying excellent health.

Benign Stricture of the Common Duct

Obliterative cholangitis is admittedly the cause of common duct stricture in a fair number of cases, yet the fact remains that an overwhelming majority of the strictures are results of trauma to the common or hepatic ducts during the removal of the gall bladder. Practically all reported cases of stricture have followed operation for diseases of the gall bladder or bile ducts. As one studies these cases one is impressed by the great responsibility a surgeon assumes when he undertakes any operation of the biliary tract, however simple the procedure may be. As emphasized by Judd, "the injury is usually due to the fact that there is inadequate exposure of the field of operation and not enough attention is given to the separation of the lower end of the gall bladder and cystic duct from the surrounding structures before clamps are applied. This applies particularly to those cases in which there is a small contracted gall bladder and the cystic duct is not discernible, or in cases with a large distended and tense gall bladder, the lower end of which is crowded down under the common duct." On the other hand, injury may follow a simple cholecystectomy. Because of some technical difficulty, the cystic duct is inadequately clamped or ligated, and in an attempt to catch the bleeding vessels, the common duct is inadvertently caught and ligated. If the common duct is ligated or severed, and the proximal end closed, jaundice ensues immediately following the operation, and will gradually increase, but not usually associated with pain, chills, or fever. Those cases in which the common duct is severed and not ligated, or in which the ligature gives away, a biliary fistula will ensue. These fistulae may drain constantly from a few months to several years, however, they show a tendency to close periodically, with resultant intermittent obstruction, associated with jaundice, pain, chills, and fever. The symptoms of stricture are not characteristic, and at times it is difficult to differentiate between a stricture and some other lesion of the common duct. Following an operation on the gall bladder or ducts, in a patient, who has, previous to operation, been draining bile into the intestines, there is an immediate and persistent drainage of bile through the wound or painless and persistent jaundice ensues, and in a patient in whom there is no evidence of cancer, a diagnosis of stricture can usually be ventured. Operations upon the common bile duct for strictures are among the most difficult tasks in surgery. In most cases, anastamosis of the proximal part of the common or hepatic duct to the duodenum, is the operation of choice. This is best carried out by a suture technique, a tube being used in the lumen of the duct. In the event the distal end of the duct can be isolated and found in good condition, an end-to-end anastamosis of the duct over a T-tube is the best procedure. In patients with a biliary fistula, the fistulous tract may be dissected free and anastamosed to the stomach or duodenum. Excellent results are reported by Masson, Lahey, Walters, and others, after such a procedure. Following operation in these cases, most meticulous care should be instituted. Even in cases with biliary fistula and lack of clinical signs of jaundice, biliary cirrhosis and latent jaundice are important factors, for oozing and bleeding may be as troublesome as in cases of frank jaundice. With the slightest indication of bleeding transfusion should be given. In fact, I believe that all cases should be transfused as soon as the operation is completed.

MALIGNANT STRICTURE

Malignant stricture of the common duct is in most instances, due to carcinoma of the head of the pancreas. It is comparatively rarely due to carcinoma of the ducts, ampulla, or gall bladder. Obstruction here is usually rapid and complete, and infection, when present is a terminal event. The classical symptoms of a malignant stricture are painless, progressive jaundice, persistently clay-colored stools, absence of bile in the duodenum on repeated duodenal tubing, and a dilated gall bladder. As pointed out by Judd and Parker, "too much significance should not be placed on the presenting symptoms in the differential diagnosis, because on analysis, it will be found that in a high percentage of malignant cases, the presenting symptoms will be colics and pain as well as jaundice, which is not in keeping with the general understanding of the significance of painless jaundice, which has usually been supposed to signify that the lesion causing it was either malignancy or a simple inflammation, such as cholangitis." Weir, Fitts, and McVicar, in an analysis of a large series of cases, found that colic and pain are common symptoms in malignancy of the pancreas and common bile duct. The employment of the Lyons duodenal tube to determine the presence or absence of bile in the duodenum, is useful in the differential diagnosis. If the obstruction in the duct is due to a tumor of the ampulla or the head of the pancreas, repeated duodenal drain-ages do not yield any return of bile. Whether or not a patient with a painless jaundice should be explored, especially when the gall bladder is not enlarged, is a debated question. I feel that all patients with obstructive jaundice should have the benefit of exploration, provided the likelihood of catarrhal cholangitis can be ruled out, and the condition of the patient will permit. Oftentimes exploration will reveal a benign lesion which can be removed, whereas, if the condition is malignant, biliary and intestinal continuity can be re-established. Even at best, it is only palliative. The patient is relieved of jaundice and intolerable itching.

The operation of choice is the anastamosis of the distended gall bladder to the stomach. The anastamosis may be made to the duodenum, jejunum, or even to the colon, but this is less desirable because of a greater likelihood of infection of the gall bladder and bile ducts following these procedures. It is generally agreed that less infection in the biliary tract occurs following cholecystogastrostomy than in other types of biliary intestinal anastamosis. If the gall bladder has been removed at a previous operation, or found contracted from some disease process, the dilated common duct can be joined to the duodenum. In those instances in which the jaundice is of long standing, and because of the poor condition of the patient, a two-stage operation can be carried out, as described by Walters. The first stage consists in doing a cholecystotomy, followed in two to three weeks by an anastamosis of the gall bladder to the stomach.

MISCELLANEOUS GROUP

In a small group of patients, obstructive jaundice is due to such conditions as suppurative cholangitis and chronic pancreatitis. Prolonged drainage of the common duct with a T-tube is the best form of treatment in these cases. It is impossible at times, even at operation, to distinguish between tumors of the head of the pancreas, caused by inflammation, and those due to carcinoma. In these doubtful cases it is better to do a "side-tracking" operation; i. e., anastamosing the gall bladder or common duct to the stomach or duodenum. Benign tumors of the common duct are very rare, only about 16 cases having been reported. Marshall reported four from the Mayo Clinic. Resection of the growth is the best type of treatment.

POST-OPERATIVE CARE

A detailed post-operative management is very necessary in all operations on the common duct. All signs of hemorrhage should be watched for, and on the slightest indication of bleeding, repeated transfusions should be given until it is under control. One of the most important adjuncts in the care of these patients is the free use of glucose. The patient should receive 2,000 c.c. of 10 per cent glucose intravenously in each 24 hours until a liberal fluid and food intake by mouth can be ordered. The diet should be low in protein and fats, and high in carbohydrates. In addition to this diet, corn syrup and milk should be given. It is very important that the patient receive an adequate fluid intake in order to prevent dehydration, especially in those cases in which bile drainage is to the outside. The possibility of hepatic insufficiency should be kept in mind. This is manifested by cholerrhagia. The bile becomes increased in amount, pale and thin, as a result of a decrease of the concentration of the bile pigment and bile acids, and is indicative of injury to the parenchyma of the liver. It has been shown that large quantities of chlorides are lost through the bile, and unless adequate measures are taken, there is danger of serious depletion of both fluids and chlorides, with resultant dehydration and toxemia. This condition is best controlled by intravenous administration of 10 per cent glucose in 1 per cent saline in quantities from 2,000 to 3,000 c.c. daily.

A certain number of patients in which external biliary drainage has been established, will suffer from a lack of bile entering the intestinal tract. This is evidenced by a loss of appetite, nausea, uncontrollable diarrhea, and a general depressed feeling. If these symptoms ensue before it is safe to clamp the T-tube, thus forcing some of the bile into the duodenum, it is better to collect some of the bile that escapes from the tube or biliary fistula, and feed it to the patient through a duodenal tube. Under this regime, the untoward symptoms soon subside. This was carried out in patients of our series with very happy results. In the event bile and pancreatic juice begin discharging from the abdominal wound as a result of leakage around the site of the anastamosis following a hepatico-duodenostomy, the wound should be kept free from the discharge by inserting a catheter into it, which is in turn connected to a suction apparatus. The patient should also have adequate intake of glucose and saline by the intravenous routes to combat dehydration and loss of chlorides. These cases respond readily to such management. In patients in which the common duct is drained with a T-tube, the patency of a duct usually can be ascertained by the ability to clamp the duct without causing discomfort, increase in the color of stools, and a lack of drainage of bile about the tube. However, much valuable information can be gained by radiographic visualization of the biliary ducts with radiopaque oils. This gives information as to the size, contour, and patency of the common and hepatic ducts.

CONCLUSION

In conclusion I wish to emphasize the following points:

1. In operating on the gall bladder, a thorough examination of the common duct should be carried out in each instance.

2. Careful and intelligent surgery should be practiced at the time of the primary operation.

3. A most meticulous pre- and post-operative treatment should be instituted in all cases in which operation on the common bile duct is done.

REFERENCES

1. Biliary Intestinal Anastomosis for Obstructive Jaundice. E. Starr Judd, M.D., and Bennett R. Parker, M.D. Archives of Surgery, July, 1928.

2. Diseases of the Liver. Carl H. Greene, M.D., Charles S. McVicar, M.D., Leonard G. Rowntree, M.D., Waltman Walters, M.D. Archives of Internal Medicine, September, 1925.

3. Surgery of the Biliary Tract. E. Starr Judd, M.D. The Indianapolis Medical Journal, June, 1929.

4. The Advantages of Two-Stage Cholecystenterostomy. Waltman Walters, M.D. Surgery, Gynecology and Obstetrics, August, 1929.

5. The Liver in Relation to Carbohydrate Metabolism. Frank C. Mann, M.D. Transactions of the Association of American Physicians, 1925.

6. "Sidetracking" Operations in Obstructive Jaundice. E. Starr Judd, M.D. Read before the Section on Surgery, General and Abdominal, June, 1928.

7. The Relationship of Pain to Jaundice. J. F. Weir, M.D., W. T. Partch, M.D. Staff Proceedings of the Mayo Clinic, Feb. 25, 1931.

8. The Effects of Obstructive Lesions of the Common Duct of the Liver. E. Starr Judd, M.D., Virgil S. Counseller, M.D. A. M. A. Journal, Nov. 19, 1927.

9. Prolonged Drainage of the Common Duct. E. Starr Judd, M.D., Robert B. White, M.D. Transactions of the Southern Surgical Association, 1928.

10. Clinical Aspects of Jaundice. Charles S. McVicar, M.D., Will T. Fitts, M.D. A. M. A. Journal, Dec. 10, 1927.

PELLAGRA*

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MY presenting this subject for discussion before this society has been occasioned by having seen an increased number of cases and feeling that the present economic distress will be conducive to a further increase in our rural communities, we should use any means at our command in an effort to prevent the spread of the disease.

Pellagra involves three distinct systems in a striking manner. The skin is affected with a defacing dermatitis, the digestive system is disturbed with a debilitating diarrhea and the nervous system supplies symptoms varying from a mild neurasthenia to a distressing dementia. The medical profession has contributed richly to the history of the fight against the ravages of this disease.

Pellagra is first mentioned in our country in the northern states. In 1864 by Dr. Jno. Gray, of Utica, N. Y., and Dr. Tyler, of Sommersville, Mass. Each reported a case. An Italian soldier furnished Dr. Shewell of Brooklyn a case in 1883. Charity Hospital records show a case in the service of Dr. Bemis in 1889. An intensive study of the disease in this country followed the report of Searcy in 1907, which was an epidemic in an asylum in Alabama. The disease was reported from all over the South in a succession of startling findings until the entire profession and public health service was aroused. The challenge was accepted. Names of men, who did stupendous labor, were written in the pages of American medical history. Foremost among these was Joseph Goldberger. Together with his co-workers of the U. S. Public Health Service and physicians of the South, he, in the next twenty years, carried on one of the most remarkable studies of epidemic disease that medical history records. His efforts clarified many of the factors causing the disease and standardized its treatment.

But the conquest is not complete. Suggestions for its prevention were given, but prevention has not been accomplished. Greater knowledge and the spread of this knowledge and perhaps a better enlistment of the economic forces of the community are needed. Much remains to be done.

Pellagra is found in 80 per cent of the United States and in all of her extra continental possessions. The lower Mississippi Valley, the states of the Southeast and the states of the Southwest are the areas of greatest prevalence. In Europe, the Mediterranean countries and the Balkans are areas of greatest prevalence. Asia has many pellagra regions. The best known are those of Asia Minor and India.

Recent reports of the U. S. Public Health Service indicate that the prevalence of pellagra has been increasing for several years in this country. The progress in the study of the disease, the newer insight into its probable etiology, and the vaunted prophylactic as well as the curative measures applicable to the malady have awakened the hope that uncertainty is about to be replaced by confidence in its management. Pellagra is not a new disease, though its prevalence in the U. S. was not appreciated until the present century. In most countries it has been regarded as an essentially chronic malady confined almost entirely to the poorer classes in rural communities, but this has not been equally true in the U. S., where it has been known to affect both the white and negro races.

Several theories regarding the cause of pellagra have been propounded. The oldest, the Zeist hypothesis, attributed it to the use of spoiled corn, as it appeared among the maize-eating groups. Subsequently pellagra was classed by many in the category of infectious diseases due to a specific micro-organism. There was much in its incidence to suggest a microbiotic etiology but this theory has largely been abandoned since the pioneer investigations of Goldberger and his associates in public health service. They have insisted on a dietary origin for pellagra, placing it in the category of deficiency diseases.

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*Read before the Middle Tennessee Medical Association, Springfield, Tenn., May 14, 15, 1931.

Dr. J. T. Martin, of Oklahoma City, Okla., in a paper read before the Southern Medical Association in November, 1930, gives some interesting reports of many different experiments as to causation theories. He says: "The maize theory of the cause of pellagra is the oldest. Marzari, in 1810, first mentioned the possibility of the relationship of maize to pellagra. This idea has been studied and followed by many and is still commented on in the literature. Early in 1930, Dr. H. B. Day says that "Pellagra bears the same relationship to maize that beri-beri does to rice." Maize is considered by the later students as a predisposing rather than an exciting cause.

Living organisms have often been assigned an etiologic role in this disease. About two years ago Terrell and Venable read a paper before the Oklahoma State Medical Association on complement fixation test by prepared antigen for diagnosis, and supported the idea of an infectious cause. Dr. Francis, of the Public Health Service, after making 94 animal inoculations of every kind of material from a pellagrin, obtained negative results. He concluded that his work gave no support to the theory of an infectious cause. There is no convincing evidence today of the infectious theory.

The meat protein theory is heartily supported by the English writers. W. H. Wilson, of Cairo, is a strong supporter of this idea. In the British Medical Journal of Cairo, is a strong supporter of this idea. In the British Medical Journal of January 18, 1930, Wilson cites the Dunbar Prison outbreak studies in support of the idea. Professor McGraw, before the Section on Tropical Diseases of the Royal Society of Medicine, affirms that the "vitamin theory has not been established to such an extent that all other theories are put out of court."

The vitamin theory was urged and developed by Goldberger. It was first hinted at by Marzari and this theory leads all others in the number of its followers. With this theory there are two ideas prevalent, the first that the absence of a vitamin, P. P. or B2 or G causes the disease. In Goldberger's experiments at the Mississippi State Penitentiary near Jackson, Mississippi, six out of eleven prisoners developed pellagra when fed on a diet that was low in vitamin P. P. and low in meat protein. The same worker conducted an experiment at Jackson with two orphanages, neither of whose inmates developed a case of pellagra when on a diet that was rich in vitamin P. P. and in meat proteins (Goldberger and Waring), although at both institutions pellagra had previously been endemic. At the Georgia State Sanitarium a similar result was shown in which the usual incidence of pellagra prevailed among the controls while the disease was absent from those on the anti-pellagra diet. In his last effort Goldberger satisfied himself that meat protein was not essential if the vitamin was present: that is, that pellagra was caused by the absence of vitamin P. P. and this vitamin, while found freely in meat, was present in still richer quantities in yeast.

Dr. H. B. Day, in the British Medical Journal of January 7, 1930, suggests that the absence of vitamin P. P. causes atrophy of the intestinal mucosa and that the ensuing mal-digestion and mal-assimilation complete the vicious circle. Dr. R. B. Ellis, writing on the subject of pellagra secondary to gastro-intestinal diseases, expresses a similar idea."

Although pellagra has been known in Europe nearly two hundred years, and in this country almost a quarter of a century, it is only recently that the nature of its cause has been made clear and practical and effective measures for its treatment and prevention have been established. Pellagra is unlike most preventable diseases with which we have to contend, as infection appears to play no part whatever in the causation, and the sanitary and hygienic measures commonly employed against transmissible diseases offer no aid in its control. On the other hand it has been definitely established by studies conducted by public health service that it is caused by an inadequate supply of essential food element that belongs to the class of accessory food principles known as vitamins. A deficiency of any one of the vitamins will bring about an impairment of health and, unless soon corrected, will lead to the production of disease. The nature of the disease produced depends upon the particular vitamin found wanting in the diet. Thus, scurvy follows the prolonged consumption of a diet in which the vitamin C is not supplied in sufficient quantity. Rickets is caused by a diet deficient in the anti-rachitic vitamin or vitamin D, and pellagra is produced by a protracted diet deficient in vitamin G.

It has been abundantly demonstrated that pellagra may be produced or prevented at will by simply varying the quantity of food of which carries the anti-pellagric vitamin. This occurs without regard to the quantity of other foods consumed, which, except for the shortage of this particular vitamin, may be in perfect physiological balance. Therefore, it is seen that pellagra, like other vitamin-deficiency diseases, is brought about by the absence of a specific and essential dietary factor and is in no way dependent upon starvation in the ordinary sense as is frequently assumed.

Bliss, of Tulane University School of Medicine, has formulated a different hypothesis. He ventures the suggestion that pellagra is an iron deficiency disease. He points to anemia as a concomitant of pellagra. He also notes that the foods which are supposed to contain liberal quantities of vitamin G, viz: (beef, liver, egg, and yeast) are all iron-containing foods (some of them being among those containing more iron than any other known biologic product), while the pellagra producing diet (molasses and cornbread) of poor farmers of the South is extremely poor in iron.

Dr. Charles Longhinghouse, of North Carolina, in an account of a conference of members of the U. S. Public Health Service in 1930 reports an alarming increase of this disease. He reports 301 new cases in July, 1930, for North Carolina, the same state in June, 1930, had 122 deaths and in May, 1930, had 115 deaths. The total deaths for the first six months for the state of North Carolina was 468 out of 1,442 cases reported. The total afflicted in North Carolina is estimated at twenty thousand. The Oklahoma State Health Department likewise reports an increase of 134 per cent in pellagra deaths between 1925 and 1929. The cases reported in the same years increased 90.75 per cent; at the Eastern State Hospital the increase was 150 per cent; at the Central State Hospital the increase in admissions for the fiscal year ending July 1, 1930, was 33 per cent more than 1929. It is estimated that in the Mississippi Valley there is from 40 to 60 thousand pellagrins. With so wide a distribution and with nearly all areas reporting an increase in the incidence and death rate of the disease pellagra becomes of major importance both as a medical and as an economic problem. Those areas of excessive pellagra prevalence differ from those in which the disease is less of a problem in that the agricultural practices are such as sharply limit the kind and quantity of food stuffs produced. This, in turn, directly and profoundly influences the nature of the diet consumed. In most instances cotton is the principal crop produced, or as a rule the greatest prevalence is in one crop areas. This means that the great majority of the people must depend largely upon food secured from distant sources and distributed through local rural stores or commissaries. Most of such foods are necessarily of a non-perishable nature and consist largely of flour, cornmeal, hominy grits, rice, salt pork, lard or lard substitutes, molasses, limited quantities of dried beans and peas, evaporated fruits and various canned or otherwise preserved foods, nearly all of which have been found to be low in P. P. vitamin. The greatest amount of dietary restriction occurs during the late winter and spring months when the crop is in the making, money scarce and credit is hard to secure. During the remainder of the year, or season of harvest, are under prosperous conditions generally, cured meats, sometime fresh meats, cheese, a large assortment of canned foods, the less perishable fresh vegetables and some locally produced food stuffs find their way into many households. This situation accounts for the fact that, in endemic pellagra, the vast majority of cases develop during the spring and early summer when the sun begins to shine hot. Recent studies indicate that turnip greens, spinach and collards may offer a fair degree of protection, while perhaps less efficacious than fresh meats and milk, such food will, in many instances, be found more practicable for the reason that they may be readily and cheaply produced in the pellagrous sections and be made available in almost unlimited quantities during those months when protective food supplements are most needed.

The discovery of yeast in the treatment of pellagra came about like so many other important scientific advances, by accident. Goldberger, in attempting to stimulate the appetite of dogs for a diet calculated to produce black tongue, a canine disease similar to pellagra in man, added yeast cake to their food, subsequent observations showed that black tongue did not follow a prolonged administration of faulty diet among dogs to whose food yeast had been added, but that an exactly similar ration without the added yeast caused the appearance of symptoms of black tongue in other dogs in due course. Later the removal of the yeast from the diet of the first lot of animals was followed by symptoms of black tongue.

All leading clinicians as well as the majority of rural community physicians are fairly well agreed on the curative treatment of pellagra and personally in so far as I am able to get co-operation from this class of patients, I treat them very much the same as treating a case of pulmonary tuberculosis. Rest in bed, liberal consumption of fresh, wholesome milk, lean meats, such as steak, pork and chicken, with an abundance of fresh, green leafy vegetables, fruits, cereals, cream and fresh eggs. Dried yeast coming as the last suggestion toward supplying an unknown quantity known as factor P. P. or an anti-pellagrous vitamin. One-half to one ounce dilute hydrochloric acid daily. And in advanced cases I have found sodium caccodylate in seven and one-half grain ampoule doses both intramuscularly and intravenously of great value, not only in correcting the skin manifestations, but controlling the extreme neuroses.

Until the rural community physicians, especially those in the one crop areas, learn to diagnose pellagra early and cease to attempt to treat it with medicine alone, and until the county health units take greater steps along educational lines and teach the people what to eat and how to rest once the symptoms develop, it is my opinion that rapid strides towards eradication will not be made.

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H. H. SHOULDERS, M.D., Editor and Secretary

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EDITORIAL

DR. RAY LYMAN WILBUR AND THE COMMITTEE ON THE COST OF MEDICAL CARE

Under the general heading, "Medicine," the magazine *Time*, in the issue of March 28, 1932, gives considerable space to a statement by Dr. Ray Lyman Wilbur concerning the recommendations that are to be made by the Committee on the Cost of Medical Care some time next November.

The following paragraphs were in quotation marks:

"If we organize our talent for producing medical services economically and efficiently, we shall undoubtedly find that the cost is not too great for our present society. For inadequate medical services, produced with all the wastes inherent in the individualized practice, we now pay about $30 per capita annually. With organized, coördinated effort we should be able to provide ample medical services of good quality to all people, and with proper remuneration to the professional personnel, for costs of somewhere between $20 and $50 per capita per year.

"If all but the indigent can pay the price, we merely face the technical task of devising suitable methods of collecting the charges. On the other hand, if we find that there are substantial groups of our people who, though not indigent, nevertheless have so little surplus over the bare essentials of life that they cannot reasonably be expected to pay the cost of decent medical service, economically provided, we face a different and somewhat more vexing problem.

"If we expect charity to meet the cost, we are faced with the fact that charity, when obviously labeled as such, is distasteful to self-respecting people, and is too erratic and inadequate to meet such a large national problem.

"May we, in such cases, turn to the local, and perhaps the State, government and expect that it will meet a sufficient share of the cost to bring the charge to individual families within their reach? May we expect that local officials will agree that the protection of the people's health is as important, although not as costly, a social responsibility as the education of their minds? May we assume that methods can be worked out that will enable the local government to help carry the financial burden without placing the dead hand of official red tape or politics on scientific progress and skilled service?"

It will be observed that three of the four paragraphs quoted begin with "IF," and the fourth with "MAY WE." The last two sentences begin with "MAY WE EXPECT" and "MAY WE ASSUME." The last sentence states an assumption which has been misleading the public for some years. The assumption is that the government, local or national, can or will do things "without placing the *dead hand of official red tape or politics on scientific progress and skilled service*." This is a rash assumption that makes null and void every conclusion *assumed* concerning the medical care of routine illnesses and injuries by means of governmental organization. Other statements in the article indicate that Secretary Wilbur himself knows better. Certainly a man in politics as prominently as he should know better.

In the second paragraph this sentence appears: "On the other hand, if we find there are substantial groups of our people who, though not indigent, nevertheless have so little surplus over the *bare essentials* of life that they cannot reasonably be expected to pay the cost of decent medical service, etc." A discussion of this paragraph involves, first, a definition of what constitutes a "bare essential of life." It is implied that medical care is not a bare essential. If medical care is not one of the bare essentials, why is such a fuss made about it? If it is an essential, then we may discuss it along with other essentials of life.

Food, clothing, and shelter certainly may be regarded as bare essentials. Either or all of these three essentials may be supplied the public by communistic or governmental machinery more easily than medical care. Each of these three bare essentials have a definite bearing on the prevalence of illness and death. Illness is much less prevalent among people who have good food, good clothing, and good homes. It would, therefore, be better to apply communistic methods to fundamentals first if they are to be applied at all.

The quality of medical service any sick person receives is dependent very largely on one factor, and that factor is the ability and character of the doctor who has charge of the case. This is a fundamental fact lost sight of by most people who theorize on the subject of medical care. The ability and character of the doctor are not susceptible of standardization. Nor can these qualities be created or regulated by statute. Every doctor knows he would rather be treated, even operated on, if you please, in poor surroundings by some doctors than to have others treat him or operate on him in the best-equipped institution in the world. This rather strange statement is made to give emphasis to the fact that the character and the ability of the doctor in charge of a patient determine very largely the quality of medical care delivered. No sort of physical equipment, nothing can supplant this truth.

The standardization of education, including medical education, fails to produce a standardized product.

Two men born of the same parents, educated in the same institutions, may react quite differently to the actual problems of life. Human beings simply cannot be standardized. Certainly the qualities of services any graduate of medicine will deliver cannot be standardized.

The three bare essentials may all be carried in stock by a commissary operated by the State. A knocked-down house can be sold ready to be assembled. Food, such as meat and milk—in fact, all the necessities in the way of food—may be handled by the commissary. Clothing may be standardized in every way except a fit. It can be standardized as to color, weight, and quality. The little detail of fitting is a small matter of mechanical detail. All these supplies and services may be standardized. They do not require the *personal qualities* required to deliver medical care. One doesn't even have to know personally the man who delivers milk and meat. The quality of food, of clothing, and of shelter are independent of any personal quality. If these services are delivered by communistic methods at small cost, the people of moderate means would have the money with which to buy the type of medical care desired by them. The reverse, of course, is the recommendation implied in the article. It should be understood that we are opposed to communism at all. If communism is to be tried out in this country, it should be tried where it will bring the least disaster.

As to waste and inefficiency in medicine. There is some waste and inefficiency in medicine. There is far more waste and inefficiency in the production and delivery of the other essentials above referred to. For example, note the difference in the price of a few pounds of wool and the price of a suit of clothes. Think of the price of beef cattle and the price of meat at the meat market. Think of the price of corn and the price of cornmeal in the grocery store. Think of the cost of clay out of which bricks are made and the cost of houses. Yes, there is more waste in the manufacture and distribution of these other bare essentials than there is in the delivery of medical services under the system of individual practice.

So if America must adopt communism by degrees, it is much wiser that we begin the process on the *necessities*.

There are prominent doctors in America whose life work has been in connection with institutions. Their viewpoints are entirely institutional. They are quite ready to promulgate their theories on those whose life work is that of delivering medical service to sick people. The latter work in a quiet way. They shun publicity. The former group seems to have the ear of the public for the moment.

Organized medicine has contributed something to the present prominence of the chairman of the Committee on the Cost of Medical Care. Was an error made?

DEATHS

Dr. T. B. Sneed, Tazewell; Kentucky School of Medicine, Louisville, Ky., 1892; aged 63, died March 9.

Dr. J. C. Wilson, Rockwood; Vanderbilt Medical School, Nashville, 1893; aged 63, died March 6th.

Dr. W. S. Clack, Chattanooga; Vanderbilt Medical School, 1903, Nashville; aged 55, died March 14th.

Dr. W. L. Wallace, Knoxville; Lincoln Memorial University Medical School, Knoxville, 1896; aged 64, died March 13th.

Dr. Allen L. Lear, Sewanee; University of the South, Medical Department, Sewanee, 1908; aged 46, died April 2nd.

NEWS OF WOMAN'S AUXILIARY

All women attending this Convention are invited to participate in this entire program whether they are members of the Auxiliary or not.

WOMAN'S AUXILIARY
TO THE
AMERICAN MEDICAL ASSOCIATION
TENTH ANNUAL MEETING
NEW ORLEANS

MAY 9-13, 1932

Headquarters:
Jerusalem Temple, 1137 St. Charles Avenue

PRELIMINARY PROGRAM

MONDAY, MAY 9, 1932

6:00 P.M. National Board Dinner and Pre-Convention Meeting (for Board Members only), Orleans Club, 5005 St. Charles Ave. Tickets $1.50.

TUESDAY, MAY 10, 1932

9:00 A.M. General Meeting--- Jerusalem Temple
Mrs. Arthur B. McGlothlan, Presiding

12:30 P.M. Buffet Luncheon---- Jerusalem Temple
Tickets $1.00

2:00 P.M. Walk through Vieux Carre, with guides, starting from the Patio Royale.

4:00 P.M. Tea ------------------ Patio Royale

8:00 P.M. General Meeting of the American Medical Association ---------- Auditorium

10:00 P.M. Reception and Dance in Honor of the Woman's Auxiliary, Tip Top Inn, Roosevelt Hotel.
Hosts: Orleans Parish Medical Society.

WEDNESDAY, MAY 11, 1932

9:00 A.M. General Meeting---- Jerusalem Temple
Mrs. Arthur B. McGlothlan, Presiding.

12:30 P.M. Auxiliary Luncheon, Southern Yacht Club (12 minutes from Canal Street or from Jerusalem Temple).
Luncheon Tickets, $1.50.
Transportation, 25 cents.

2:30 P.M. Post-Convention Board Meeting
Southern Yacht Club

2:30 P.M. Through Garden Gates: Glimpses of New Orleans.

4:00 P.M. Teas in Private Residences.

8:30 P.M. to 12 M. New Orleans Country Club.
Divertisements in the Garden, under the direction of Mrs. Lillian Lewis.
Buffet Supper.
Negro Spirituals.
(Courtesy of the Woman's Auxiliary to the Lousiana State Medical Society)

THURSDAY, MAY 12, 1932

9:00 A.M. General Meeting---- Jerusalem Temple
Mrs. Walter Jackson Freeman, Presiding.

10:00 to 10:50 A.M. Special Round Table Conference -------------- Jerusalem Temple

11:00 to 11:50 A.M. Special Round Table Conference -------------- Jerusalem Temple

12:00 M. Buffet Luncheon------ Jerusalem Temple
Tickets, $1.00

1:00 P.M. Trip to Oak Alley Plantation, visiting Spillway. Returning at 6 P.M.
or (Round trip $2.00 per person).

2:00 P.M. Round trip over Lake Pontchartrain, via New Bridges.
or (Trip $2.00 per person).

2:30 P.M. Trip to Versailles Plantation, Battlefield of New Orleans; Docks and
or Wharves.
(Trip $1.00 per person).

2:30 P.M. Delgado Museum and City Park; Newcomb Art School and Audubon Park.
or (Trip $1.00 per person).

2:30 P.M. Mayan Exhibit----- Tulane University

9:00 P.M. President's Reception and Ball---- ------------------------ Auditorium

Friday, May 13, 1932

9:00 A.M. Trip to Gulf Coast.
Train leaves L. & N. Station at 9:00 A.M., returning at 6:00 P.M.
(Round trip, $5.25, including luncheon at Great Southern Hotel in Gulfport, Miss., and bus transportation along Coast).

10:00 A.M. Golf Tournament—Metaire Golf Club
All trips start from Jerusalem Temple.
Bus transportation to be paid for by individuals.

Mrs. Joseph Hume,
General Chairman;
Mrs. Joseph C. Menendez,
Chairman of Hotel Committee.

NEWS NOTES AND COMMENTS

The West Tennessee Medical and Surgical Association will meet this year at Jackson, May 26 and 27th.

The Middle Tennessee Medical Society will meet May 5th and 6th at Sparta.

The office of Dr. J. W. Allen, of Rutherford, was burned recently.

The doctors and dentists of Kingsport have recently opened a credit bureau. We have no details of the plan, but if it works the whole profession will certainly be interested.

The American Proctologic Society will meet in Memphis May 6 and 7. Dr. J. L. Jelks is the local member of the Committee on Arrangements.

Franklin has added another holiday. The whole town (and a large part of Williamson County, too) are celebrating Dr. K. S. Howlett's professional birthday. This year the doctor completed his 51 years of practice. We join Williamson County in extending our congratulations to our good friend.

Dr. Erich Ruttin, Vienna, Austria, will give a series of lectures and demonstrations in Otology in Memphis, April 25 to 29, under the auspices of the Memphis Society of Ophthalmology and Otolaryngology. Those interested may receive further information from Dr. R. O. Rychener, 1720 Exchange Building, Memphis, Tennessee.

MEDICAL SOCIETIES

Chester, Decatur, Henderson Counties—On March 11th, this society met with the Lexington doctors. Dr. Wiley, of Scott's Hill, and Dr. Burrus, of Jackson, read papers which were discussed by all present. The meeting adjourned at 1 p. m. for lunch at the city school cafeteria. A good attendance of members and a number of visitors from Jackson enjoyed this meeting.

Coffee County—The Coffee County Medical Society met with Dr. R. L. Dossett on March 17. Dr. Dossett's subject was "Empyema", which was discussed by those present.

The April meeting will be a joint meeting of the Coffee and Bedford County Societies, to be held at Manchester on the 21st. Dr. A. E. Ray, of Tullahoma, will read a paper on mental and nervous diseases.

Five-County Medical Societies—About three years ago this office assisted in organizing a "Five-County Society" composed of Hardin, Lawrence, Lewis, Perry and Wayne. More recently five East Tennessee counties have combined for scientific purposes and now we have a second "Five-County Society". Both of these societies are doing good work and the doctors in every one of the ten counties are sure that no mistake was made by their getting together. We have the following report of the last meeting of the East Tennessee Five-County Society:

The Five-County Medical Society met in the Commercial Hotel at Livingston on March 14th. Dinner was served to the following doctors: Overton County, W. M. Breeding, W. M. Brown, J. D. Capps, L. F. Zachary and E. B. Clark; Jackson County, R. C. Gaw, C E. Reeves, F. B. Clark, P. E. Foed and L. R. Anderson; White County, S. E. Gaines, W. M. Johnson, E. B. Clark, and Drs. Tubb, Upchurch and Davis; Cumberland County, Drs. Lewis and White; Putnam County, W. A. Howard, H. H. Taylor, Z. L. Shipley, J. T. Moore and Drs. Crane and Ray.

Dr Capps read a paper on "Hypertension".

Dr. H. H. Taylor, secretary, announced that the next meeting will be held in Gainesboro, May 10th.

The West Tennessee Five-County Society enjoyed this program on March 29th, at Waynesboro:

Dr. W. K. Edwards, Centreville, "Acute Appendicitis". Discussion opened by Dr. J. T. Keeton, Clifton.

Dr. John B. Youmans, Nashville, "The Treatment of Certain Forms of Heart Disease by Thyroidectomy". Discussion opened by Dr. H. C. Boyd, Waynesboro.

Dr. Harlan Tucker, Nashville, "Case Reports". Discussion opened by Dr. T. J. Stockard, Lawrenceburg.

Dr. W. E. Boyce, Flatwoods, "Hip Joint Dislocations". Discussion opened by Dr. J. H. Tilley, Lawrenceburg.

Gibson County—Slides and moving pictures illustrated the papers of Dr. R. L. Sanders and Dr. T. D. Moore, of Memphis, when they addressed this society in April. The special guests at the meeting were the dentists and druggists of the county.

Greene County—At the banquet of the Greene County Medical Society held at the Greeneville Country Club on March 8th, a delegation of thirteen physicians from Blount County were guests.

Dr. Cecil Laughlin, president of the association, presided. He introduced Dr. G. W. Burchfield, of Maryville, who was the principal speaker. A scientific program was carried out and a number of discussions were heard on the subject.

On April 5th, a joint meeting of the Dental Association and the Medical Association will be given at the club house.

Hamilton County—March 17th: Dr. W. D. L. Record, "Calcium Metabolism".

March 24th: Dr. Earl R. Campbell, "Traumatism of and Foreign Bodies in the Urethra and Bladder". Dr. Raymond Wallace, "The Incidence of Gall Stones and Gall Bladder Disease."

March 31st: Dr. Edward T. Newell, "Radiation and Surgical Treatment of Benign Uterine Hemorrhage. Report of Cases."

April 7th: Dr. J. W. Kirkpatrick, "The General Practitioner in a Small Town."

Dr. W. W. Evans, "The Lymphatics."

Dr. E. H. Magee, "Laceration of the Cervix and Perineum."

Hawkins County—Drs. A. G. Kern and R. B. Wood, of Knoxville, were the guest speakers at the annual meeting. Their subject was the pathology of the gall bladder. Slides were shown illustrating the paper.

Henry, Carroll, Benton, Weakley Counties—On March 7th, Dr. Hollis Johnson, of Nashville, read a paper on "Tuberculosis", and Dr. Alfred Blalock, of Nashville, gave a paper on chest surgery. Both papers were illustrated by slides and all present enjoyed the program.

Knox County—March 22nd: Dr. Samuel Gant, of New York, spoke to the society on "Proctology".

March 29th: Dr. Herbert Acuff, "The Surgical Treatment of Pulmonary Tuberculosis".

April 5th: Dr. Edward H. Cary, Dallas, Texas, President of the American Medical Association, was the guest of the Society. After the banquet Dr. Carey addressed the Society.

Madison County—Dr. R. K. Hollingsworth read a paper on the "Cervical Rib". Dr. R. B. White led the discussion.

Dr. Standord Herron and Dr. Wan Burrus made case reports. Delegates were elected to the Memphis meeting.

Monroe County—On March 8th, Sweetwater doctors furnished the program at Madisonville. Dr. J. A. Hardin read a paper on "Prophylaxis of Typhoid", and Dr. W. J. Cameron read a paper on "Prostatitis".

Sullivan, Johnson Counties—On March 7th, Dr. Fred Rankin, Mayo Clinic, Rochester, Minnesota, addressed the society on "Diagnosis and Treatment of Cancer of the Large Bowels."

Before the meeting dinner was served in honor of Dr. Rankin.

OTHER MEDICAL SOCIETIES

Vanderbilt University Medical Society

1. Case Reports:
   (a) Dermatitis Gangrenosa. A Complication of Diabetes Mellitus. Dr. S. S. Riven.

A case of complete destruction of the superficial and subcutaneous layers of the skin with necrosis and gangrene in a young diabetic without arteriosclerosis was reported. Twenty-four hours after the patient was revived from coma, bullous lesions of the skin appeared over the back and legs. These were followed by necrosis and gangrene. Explanations offered were: (1) A vascular disturbance of an obliterating type with lesions appearing at pressure points; and (2) a slow circulation, with an extensive capillary bed, hyperglycemia, and bacterial invasion of the skin.

Paper discussed by Drs. Brooks and Burwell.

   (b) Unusual Superficial Tumor in Supracondylar Region. Dr. W. M. Raymond.

Mrs. E. H., white, female, age 36. Spherical tumor approximately 10 cms. in diameter, just above medial condyle of humerus, for six months. Uterine bleeding for one month. Eight pregnancies, last pregnancy two years ago. Miscarriage eight years ago. Metastases in lungs; slightly enlarged uterus; uterine bleeding. Ascheim-Zondek test positive. Tumor excised. Gross appearance that of melanosarcoma. Patient died suddenly several days following operation, apparently from pulmonary embolism. Autopsy not obtained. Microscopical sections showed findings typical of metastasis from chorio-epithelioma.

Case discussed by Dr. John Burch.

2. Diphtheria Antitoxin in the Colostrum and Milk of a Highly Immune Mother. Drs. J. Y. Sugg and J. M. Neill.

Experiments with the mammary secretion from a woman who possessed an unusually high degree of diphtheria immunity showed the presence of diphtheria antitoxin in the milk and the diminution in the antitoxin concentration that occurred during the course of the transition from colostrum to milk. As the percentage of colostrum in the secretion became progressively less, the antitoxin concentration continued to decrease until the time when only true milk could be expressed. The antitoxin titra of the milk was between 1/300 and 1/350 that of the blood serum. This concentration was maintained with more or less constancy over a period of 136 days.

Paper discussed by Drs. Dodd, Morgan, and Litterer.

3. The Chemical Action of Sodium Citrate as a Cause of Certain Transfusion Reactions. Drs. A. S. Minot, Katharine Dodd and Ray Bryan.

The reduction of the concentration of calcium ions in the blood of recipients caused by the amounts of sodium citrate ordinarily present in citrated transfusions may cause severe or fatal reactions in subjects with abnormally low calcium or high guanidine in the blood or in which a condition of alkalosis exists. These reactions are characterized by tetany, slow pulse and cessation of respiration. Calcium therapy is the most effective means of treating or preventing these reactions.

Paper discussed by Drs. Dodd, Douglas, King, Blalock and Garrey.

BOOK REVIEWS

Courts and Doctors. By Lloyd Paul Strykar of the New York Bar. Cloth. Price, $2.00. Pp. 236. The McMillan Co., 1932.

The author of this book is eminently qualified to present the complicated relationships between courts and doctors, having served for many years as general counsel for the Medical Society of the State of New York, and at the same time having personal charge of the legal policy of the Society and the defense of its members who were sued for malpractice. This publication is a response to a request of the Executive Committee of the Medical Society of the State of New York that he put in book form the results of his experience and knowledge of the law as related to doctors and courts. The subject is presented in simple, nontechnical terms and comprises information which is vital to every doctor.

Charles Gordon Heyd, President-Elect of the Medical Society of the State of New York, states in the preface that:

"It is aximotic that no one is immune to lawsuits. In this regard physicians are certainly no exception. In the last twenty years it has been apparent that there has been a constant increase in New York, at least, of the number of physicians sued for malpractice. One of the important committees of the Medical Society of the State of New York, under the chairmanship of Dr. John Alling Card, has prepared some very interesting statistical data bearing upon this question. The membership of the Medical Society of the State of New York is approximately 12,500 physicians. In 1930 there were 236 more malpractice suits brought against members of the Medical Society of the State of New York than in 1929, a thirty-three per cent increase, and representing one suit for malpractice for every twenty-two members of the Society.

The physician who is subject to a malpractice suit may be engaged in any specialty, and no group of physicians is free from the possibility of such a suit. The physicians called upon to defend themselves in court have been in practice on an average of eight years when suit was brought against them. The tremendous opportunities open to a disgruntled patient to bring an action against a physician are practically unlimited, and indicate the vital necessity for the physician to be acquainted with the present status of the law of malpractice."

Aside from the possibility of suits for malpractice the modern doctor is necessarily involved in forensic medicine through the medium of workmen's compensation acts and suits involving personal injuries, the latter of which is extremely prevalent by reason of motor transportation. It not only behooves doctors to familiarize themselves with the necessary information to serve patients requiring proper medical presentation of their cases when legal rights are involved, but it also is the patriotic duty of the doctor to assist courts in arriving at just verdicts.

Mr. Stryker's discussion of expert testimony, the doctor on the witness stand, and the doctor and the criminal law is invaluable to those desiring information along these lines. —H. M. T.

ABSTRACTS OF CURRENT LITERATURE

ANESTHESIA

By Hugh Barr, M.D.
Medical Arts Bldg., Nashville

Ether and Nitrous Oxid-Oxygen Anesthesia. John H. Evans, M.D., Buffalo, New York. New York State Journal of Medicine. February 1, 1932.

An anesthetist has no right to anesthetize a poor risk patient without knowing as much about patient's condition as the surgeon. The anesthetist should be in position to observe operation so that he can anticipate the needs for relaxation; otherwise, it is necessary to carry patient in constant deep anesthesia. Anesthetics fall in two classes—revocable and irrevocable. Revocable include inhalation anesthetics, under control of the anesthetist. Irrevocable include local and spinal anesthetics; also, the barbital preparations, avertin and colonic oil-ether. These agents when once administered cannot be recalled—only the symptoms when alarming can be combatted.

Nitrous oxide and ether are the most widely used anesthetics. Each has distinct advantages. When used together they are capable of satisfying both patient and surgeon. Nitrous oxide is pleasanter to inhale, less irritating and disturbs metabolism less. Ether is more relaxing, is safe in hands of a novice, cost is less, and no expensive apparatus is required. The comparative safety is dependent on the qualification of the one administering them.

It is impossible to obtain correct mortality rate for any anesthetic, because the deaths are not published. Dr. Keen found in 262,002 ether anesthetics the death rate was one in 7,705. Dr. Teter collected 1,161,820 nitrous oxide anesthesias with but two deaths. Dr. Buxton compiled 1,001,000 nitrous oxide anesthesias with but one death. Dr. Gwathmey estimates the death rate in major surgery as being one in 20,000 with nitrous oxide.

The author believes deaths from nitrous oxide are much greater than these figures indicate, but in skilled hands the death rate from ether or nitrous oxide should be practically nil. The reason that nitrous oxide is not safe except in the hands of those properly trained is that the signs of approaching consciousness and deep anesthesia so closely resemble each other, that a novice is inclined to push nitrous oxide when pure oxygen is indicated.

DERMATOLOGY

By E. E. Brown, M.D.
Doctors Building, Nashville

Treatment of Eczema in Infants by a Milk-Free Diet. By Julius Levy, M.D., and A. S. Finkelstein, M.D. Journal of the Medical Society of New Jersey, Newark, N. J., March, 1932.

These authors, together with other observers, have noted that the majority of infants with eczema are not breast fed, but receive modified cow's milk formulas and that the eczema usually appears after the beginning of a diet of cow's milk. This may be accounted for partially by the fact that most mothers do not nurse their babies entirely now-a-days, but either add cow's milk early as a complementary feeding or wean their babies early and resort to cow's milk feeding entirely.

From their clinic they selected infants with severe eczema who were being fed cow's milk dilutions. They stopped all local applications and tested babies for sensitiveness to cow's milk. They eliminated those in whom they did not get a positive skin test to cow's milk, breast-fed infants, and all over nine months of age. They first reduced the cow's milk intake over a period of two or three weeks. During this time skin changes, weight gains, and any progress in the children's condition was noted. When no improvement was noted the infants were put on a milk-free diet, and a soy bean preparation named "Sobee" was used instead. A series of forty infants were reported upon who varied in age from one to eight months. There were twenty-two males and eighteen females. All the babies except two took the feeding readily. In these two it was found necessary to starve them from twelve to twenty hours. Of the forty infants under observation thirty-eight showed definite improvement to cures and two showed very little, if any improvement. Itching seemed to stop in a very few days and the eruption began to clear after the first week or two.

These cases have been observed from four to ten months and there were no recurrences. They gained weight and had good stools. There were no digestive disturbances.

OPHTHALMOLOGY

By Robert J. Warner, M.D.
Doctors Building, Nashville

The Cause of Exophthalmos. B. T. King. American Journal of Ophthalmology, March, 1932.

This paper is based upon the study of 1,500 cases operated upon for goiter. In about one-half of this number, the diagnosis was exophthalmic goiter. More than fifty per cent of the latter had varying degrees of exophthalmos. It is the author's belief that the exophthalmos of hyperthyroidism is due to orbital edema. In the presence of a greatly accelerated circulation, blood is pumped into the orbital cavity more rapidly than can be readily evacuated by the veins which leave the orbit through restricting and inelastic commissures and foramina, and the resultant edema is simply due to mechanical interference with return circulation. The apparent increase of intraorbital fat is due to the edematous swelling of fatty lobules. Failure of thyroidectomy to relieve long standing cases of exophthalmos is due to the deposition of new connective tissue in Tenon's capsule resulting from chronic congestion and edema of the orbit. One case of far advanced Graves' disease with enophthalmos of an old atrophic eye and pronounced exophthalmos of the normal eye is reported. The author's explanation is that the vessels of the functionless, atrophic eye never developed to a size at which the surging circulation which followed the onset of the goiter could produce congestion in the one orbit similar to that which took place in the other.

Five cases in the author's series and eleven cases from the literature are cited in which exophthalmos developed in patients after operation. In all of these cases, the basal metabolic rate was subnormal. The author is unable to explain the reason for this. He suggests ligation of the internal carotid for severe cases of exophthalmos. He also cites Naffziger's operation of orbital decompression in which a portion of the outer orbital wall is excised.

PEDIATRICS

By John M. Lee, M.D.
Doctors Building, Nashville

The Diagnosis of Congenital Syphilis in the New-Born. Ethel C. Dunham, M.D. Amer. Jour. Diseases of Children. February, 1932.

A positive Wassermann on the infant's blood in the first few days or weeks after birth may be due, not to actual infection of the infant, but to antibodies passing from the mother's blood through the placenta into the infant's circulation. In such cases, the test becomes weaker in a few days, and a third test a few days later still weaker or even negative. If such an infant shows no signs of active syphilis, treatment is withheld by the author at the New Haven Hospital and Dispensary, and is kept under observation. If signs of active syphilis appear treatment, of course, is started.

A group of fourteen infants born of mothers with positive Wassermanns were followed by the author for from two months to four years. They had no signs of active syphilis at birth, but did have positive Wassermanns. Second and third Wassermanns became weaker and then negative. Treatment was withheld and none of the patients showed clinical evidence of syphilis during the period of observation. In seven cases roentgenograms of the long bones were normal. Spinal punctures were not done on these cases.

It is concluded that in suitable cases in which the Wasserman reaction of the mother's blood is positive, repetition of the Wasserman test on the new-born infant at frequent intervals will aid in differentiating between reactions that indicate true syphilitic infection and those that are positive because of the passage of antibodies from the mother to the infant. If the second test does not show a weaker reaction than the first, and does not become still weaker at the end of ten days, the infant is regarded as syphilitic and treatment is instituted.

SURGERY — GENERAL AND ABDOMINAL

By John L. Dies, M.D.

1213 Exchange Building, Memphis

Stricture of the Uterine Cervix. Arthur H. Curtis, M.D., Chicago. The Journal of the American Medical Association. Vol. 98, No. 11, March 12, 1932. Pg. 861-864.

Every patient who has been treated with radium applied in chain tandem throughout the uterine canal should be kept under observation, for the purpose of preventing subsequent cervical stricture. There may be no symptoms despite the presence of a tightly constricted canal, but many patients return, a year or more after irradiation, annoyed by chronic leukorrhea or suffering from pelvic discomfort incident to retained secretion.

Dilation of the obstructed cervix, performed at the office, tends to be unsatisfactory except in cases in which there is simple occlusion at the external os, or a single thin valve-like barrier, or soft cobweb granulations in the higher canal. Even though dilation of a firm stricture is accomplished, recurrence of the obstruction is frequent. Not only is this true, but the traumatism inevitably associated with overcoming an extensive fibrous stricture may result in the eventual production of a still firmer fibrosis, which resists all attempts to dilate without anaesthesia.

Many older women, well past the menopause, have cervical canals which are impassable to dilators, but no notable discomfort is suffered. Such uteri need not be disturbed unless there is a suspicion of pyometra of malignancy. In the event that surgical intervention appears advisable, amputation of the cervix in women past the menopause does not yield ideal results; the cervix should often be bisected anteriorly and vaginal hysterectomy resorted to in cases in which this procedure reveals extensive pathologic changes.

In younger women, undilatable strictures and their associated pathologic changes are usually amenable to cure by a modified Schroeder operation, other procedure adapted to thorough removal of the diseased cervical tissues. Such operation is usually preferable to treatment with the cautery knife. It is essential that the canal be left widely patulous.

1. Stricture of the uterine cervix is of sufficiently frequent occurrence to warrant the interest of every one concerned with pelvic diseases of women.
2. Important symptoms are persistent leukorrhea, dysmenorrhea, the passage of tarry menstrual blood, and pelvic discomfort of varied intensity. Any one or all of these symptoms may be wanting.
3. The pathologic changes include every conceivable variety of strictural obstruction. Dilatation and pocketing of the canal are frequent. Retention of mucoid secretion or tarry blood sometimes produce serious lesions of the upper genital tract and pelvic peritoneum.
4. Strictures may usually be diagnosed by intracervical palpation with Hegar dilators of small caliber. They are often easily demonstrable and readily overcome. At other times the diagnosis is difficult, anesthesia being required not only to reveal whether a stricture is apparent or real, but also, when a stricture is present, to determine its nature and the extent of the complicating pathologic changes.
5. The treatment of stricture of the cervix follows well recognized surgical principles. Dilation may suffice; amputation of the cervix is often necessary, and vaginal hysterectomy is occasionally indicated in selected cases.

A Further Suggestion for the Operative Treatment of Pilonidal Sinuses. Surgery, Gynecology and Obstetrics. Frank H. Lahey, M.D., F. A. C. S., Boston. Vol. LIV, March, 1932, No. 3, pg. 521-523.

A pilonidal sinus, a developmental lesion, is a skin lined cyst located between the buttocks over the sacrum, frequently becomes infected.

In a study of a series of 59 patients with pilonidal sinuses, we have found that, to insure against recurrence, it is necessary to remove the entire sinus tract, which means that wide bloc dissection of the entire sinus tract together with much of the subcutaneous fat surrounding it must be done. All extensions of the sinus, laterally and subcutaneously down to the fibers of the gluteus maximus on either side of the sacrum, must be dissected. In the middle line, the dissection must likewise be carried down through all of the subcutaneous fat to the aponeurosis covering the sacrum.

The dissection of a bloc of skin and subcutaneous tissue extensive enough to remove the entire sinus together with its ramifications and an often associated abscess, leaves a large defect over the sacrum. The large defect thus produced fills in slowly with granulation tissue and when the wound is completely healed, there results a dense, thick scar directly over the sacrum which must of necessity be subjected to a great deal of pressure when the patient is sitting. This factor we have found to be the means of producing pressure necrosis of the scar. Therefore, healing can be accomplished only by relieving the area from pressure, but there is always the danger that the difficulty will return when the pressure is again applied.

To overcome this undesirable feature, we used a method which I described some time ago in this journal. A pedunculated, fat lined skin flap was cut from one of the sides of the wound and was transferred to the midline, the free edge of the flap being sutured to the opposite edge of the wound. In this way a fat lined skin pad was placed directly over the bony prominence of the sacrum.

The lateral defect, the result of transferring the fat lined flap to the midline, was thus located over the soft part of the buttocks with the base occupied by the gluteus maximus muscle. This defect was left to granulate and to fill in with scar tissue. The scar was thus transferred from over the long sacrum to lie over the soft gluteus maximus muscle.

While this procedure proved useful, we have modified the operation so that the technique is simpler and the results are more satisfactory.

Instead of producing a pedunculated flap to be transferred to the midline, an incision is made lateral and parallel to one of the margins of the cavity, after the sinus has been removed. This incision is carried down to the fibers of the gluteus maximus muscle. The incision is made far enough out from the wound edge so that the bridge of skin and fat can be readily approximated to the opposite edge of the wound. The fat underneath and lining the bridge of skin is completely detached from the underlying gluteus maximus, so that the entire fat lined bridge of skin can be shifted over to the midline and held there by lateral approximation stitches, the fat lined bridge of skin thus resting directly over the sacrum and providing a soft, well nourished pad of tissue to withstand the pressure of sitting.

As in the first procedure, the lateral defect left by moving this bridge of skin and fat to the midline may be closed by subcutaneous and skin approximation stitches, if it seems feasible, or the defect may be left open to granulate and fill in with scar tissue. When the scar filled defect is located laterally and over the large, soft gluteus maximus muscles, as it is in this plan, pain and pressure necrosis will not result.

The transference of a bridge of skin and subcutaneous fat nourished through attachment at both ends is superior to the pedunculated flap with a single area of attachment as used in the older method, because the doubly attached flap is better nourished and therefore is better able to combat infection which so frequently complicates an operation on a pilonidal sinus, itself so often the site of infection. We have also found that necrosis of the flap does not occur when this method is used and that secondary sutures to hold the flap in the midline may be applied, if necessary, even in the presence of a granulating wound.

Conclusions

Wide dissections and complete removal of pilonidal tracts are necessary in order to prevent the recurrence of pilonidal sinuses.

The doubly attached flap here suggested has proved superior to the flap attached at only one end as previously suggested.

UROLOGY

By Tom R. Barry, M.D., F.A.C.S.,
and F. K. Garvey, M.D.
Medical Building, Knoxville

Acute Staphylococcal Infections of the Kidney. Reed M. Nesbit. Jour. A. M. A., Vol. 98, No. 8, February 27, 1932.

This paper is based on the study of 48 cases observed in a three-year period. These cases had no antecedent urinary infection and had no obstruction present.

Staphylococcal infections comprise from 15 to 30 per cent of all urinary tract infections. Average age in this series was twenty-six, there were thirty-one males and seventeen females. Sixty-seven per cent of this series gave a history of some recent acute infections elsewhere such as ear, nose, throat, or boils. Trauma was an etiologic factor in only one case. The pathology is first one of congestion and edema, with multiple small areas of suppuration, scattered through the cortex. These abscesses may enlarge until they involve the entire parenchyma. Synonyms are acute renal suppuration, septic infarction, carbuncle, etc. Rupture of abscesses through the cortex is a common cause of perinephritic suppuration.

The onset is usually abrupt, pain followed by chill. Pain and costo-vertebral soreness was present in all but one case, loss of appetite, malaise, rarely nausea and vomiting. Temperature may reach 105. The average leucocyte count was 16,000.

The urine may be essentially negative. Gross hematuria was present in eight cases. A trace of albumin is the rule. Staphylococci were demonstrated by smear in each case. Attention is directed to the fact that cultures may be sterile in the presence of organisms demonstrated by direct smear. He thinks the smear more dependable than culture. Absence of pus in urine is not uncommon. Secondary invasions by bacillus coli are common. At this stage pus is always present.

Diagnosis is sometimes difficult. Differentiation must be made from acute appendix, acute hydronephrosis, and cholecystitis. The history of recent boils and so forth is most important. Perinephritic suppuration is the most common complication.

The course is usually stormy for the first week after which symptoms usually subside. Average duration of symptoms in this series was fourteen days. The uncomplicated cases usually end in complete recovery. One case in this series died.

A conservative treatment is advised, surgical drainage of abscesses may be advisable in a few cases. Prompt recognition and drainage of a perineal abscess is paramount.

A Comparative Study of Cardiovascular Syphilis in White and Negro Races. A. T. Cason. American Journal of Syphilis. October, 1931.

A study of 864 consecutive cases of syphilis in both white and colored patients was undertaken to determine if the old teaching "that cardiovascular syphilis was more prevalent in the colored race than in white." Of the 164 cases studied, 138 were definitely cardiac syphilitics. Many of the remainder had cardiac lesions, but the syphilitic origin could not be proven and for this reason are not included in this study.

Of the 138 cases showing cardiac lesions, 74 per cent were colored, 62 per cent of whom were males. Of the 26 per cent white cases, 86 per cent were males. This apparent majority which was found in the colored race, is explained by the fact that the negro is not treated as early as the white, and thereby not given the chance of avoiding cardiac lesions. The total number of syphilitics applying for treatment are predominantly negroes.

He found that 19 per cent of syphilitics doing heavy work developed cardiac lesions against 10 per cent doing light work. In other words, heavy work almost doubles the chances of cardiac lesions in syphilitics.

These studies are not convincing that cardiovascular syphilis is more common in the negro.

NON-CANCELABLE

MUTUAL BENEFIT
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HEALTH AND ACCIDENT
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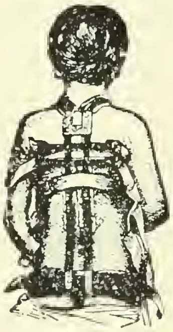

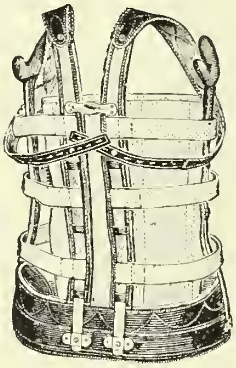

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WILL THE FUTURE POLICIES OF ORGANIZED MEDICINE BE AGGRESSIVE OR SUBMISSIVE?*

T. R. RAY, M.D., Shelbyville

THE past decade has been wrought with more complexities in business, social, and governmental affairs throughout the entire world than any similar period since the foundation of our American republic. It is but natural and true that such conditions would be conducive to variant channels through which the ever-active mind of man would flow. The activity of man's intelligence and thinking has always determined his destiny. So long as it is in tune with the higher and nobler attributes of his soul, nurtured by his desires and propelled by his ambitions to serve to his utmost capacity his Creator and his fellow man, his right to exist has remained unquestioned, his ideals undissolved. But when he thinks only in terms of self and allows his intelligence to follow after strange gods, his refinement and culture wane and step by step he approaches the catastrophe of his folly.

The price of our American liberty was purchased with rivers of blood; it was conceived in the minds and souls of men who knew the pangs of tyranny and who resolved to give to the world a land where babes could be born out of bondage, and where men could follow the dictates of their souls and allow their intelligence to unfold, individualized people to grow, contentment and happiness to prevail, and to honor the civilization of which they were a part.

As a result of this idealism and noble heroism, science began to unfold itself through the eager and alert minds of a free people. A democracy was founded, and we are the most envied people of the world today. We, who are American born, have been schooled, and rightly so, to honor and respect these traditions, to believe only in a government "of the people, for the people, and by the people." But we must not fail to take into consideration that today our one hundred and twenty million people are a cosmopolitan citizenship, millions of whom came from all corners of the earth, who have not been schooled as most of us, and whose philosophical ideals differ from ours, and too often they paint alluring paths that captivate our fancies and lead us on a destructive way. Socialism, communism, and Bolshevism are un-American, diametrically opposing democracy. We cannot introduce them into our social and political life and retain any degree of reverence and respect for our forefathers who gave to us our liberty. Nor can we mend any defects of our democracy with them, and the attempts that have been made in this direction by our Congress and many of our State legislative bodies will ultimately prove a colossal blunder and a continuous source of unrest and misunderstanding in the minds of our people.

It is time for us to concentrate our thinking on things American if we would have our government with all her sacred institutions live. Let us not look continually to Congress or our legislative halls to pay our debts, to market our products, to give us food, to keep us clothed, to find us jobs, and to heal our sick, but be truly American and exercise more individual initiative, and discard these socialistic and communistic ideas before their talons finally fix and make their death strangle on a stalwart democracy.

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*Presidential Address, read before the Tennessee State Medical Association, Memphis, April 12, 13, 14, 1932.

The Tennessee State Medical Association has passed her one hundredth anniversary. The pioneers of our profession who founded it, and those who have followed through the past century, contributing to its progress and ongoing, have had in their hearts one fixed purpose—to safeguard the health and to render the most adequate service possible to all the people of Tennessee. And I am persuaded from the records that we owe no apology for a lack of sincerity in the performance of this duty. Our profession has never asked for legislation that directly pertained to the benefit of the doctor himself, but it has always been to promote the health and to safeguard the general welfare of the people they serve; and if the organized profession of the United States is to maintain its dignity and self-respect through the inevitable struggle we have before us, we must fight, not on the basis of self-preservation, but for the rights of the people we serve, for their interests and their welfare are the only excuse for our existence.

State medicine is the common enemy of the people, of the government and of the medical profession; but of the three, the medical profession within itself could best see it come in the fullnes of its power. Aside from being physicians, we owe a patriotic allegiance to our country, and we are entirely within our rights to raise the question, if socialism is the cure for medical economics, would it not be well for industrial economics? I would not overexaggerate the seriousness of State medicine in this country, but its efforts to implant itself are self-evident, and its fruits where it exists are ample evidence of its danger.

Since the idea had its inception and birth in countries where individualism and free thinking did not prevail and where democracy dared not speak, we can best turn for a moment to review, in part, the calamity it has wrought; and logical thought will teach us, if our minds have not been closed against the truth and our wills bound by the leashes of communism and socialism, that in free America it can find no rightful place to implant itself nor true patriotism to nurture its growth.

1. Germany, the fatherland of paternalism, was the first country to establish social insurance against illness. Compulsory sickness insurance is required of all laborers, salaried personnel, and domestics who make three thousand six hundred marks (about $900) or under annually. Thirty-two per cent of the population is insured. Eighty per cent of the German physicians get their entire income from this source, the average income of the insurance physician being six thousand marks (about $1,500) a year, although forty per cent do not make more than one thousand marks (about $250) a year, since only fifteen per cent of the physicians have salaried appointments in hospitals, universities, and government service. There is a long waiting list of about four thousand recent medical graduates anxious to get on the insurance list, which requires about five years to do; and the private practice is handled by about five per cent of the physicians.

Doctors are paid according to the number of visits made, on the basis of one mark (about 25 cents) for an office visit and two to three marks for a house call. This encourages the doctors to make as many visits as they can, while the insurance people are interested in rendering sick benefits at the lowest possible figure.

This has resulted from the rapidly deteriorating profession in constant grumbling. In 1923 there was a strike of all the physicians, quickly quelled by the insurance companies, who set up a large number of clinics manned by strikebreakers. Even now there are thirty insurance clinics in Berlin. The medical service there is appalling, malingering is rife. In 1926, of eight million patients, one and three-tenths million had to be asked to present themselves for control examination because they said they were unable to work. One hundred ninety-eight thousand one hundred and forty-two did not even present themselves; two hundred nineteen thousand nine hundred and twelve discovered they were cured on the day of examination, and two hundred ninety-two thousand one hundred and thirty-three were found to be in good physical condition. Thus seven hundred and ten thousand, or fifty-six and five-tenths per cent, were found to be pseudo-sick and sent back to work.

2. We find chaos and ruin to the profession and people in England, where a similar practice, known as the Pannel system, is in vogue. In 1929, four hundred ten thousand nine hundred and three were referred to the regional medical officer for the questioning of malingering. The prospect of examination caused one hundred nine thousand six hundred and sixty-one of these persons to declare themselves "off the fund," and eighty-nine thousand seven hundred and fifty failed to attend "for other reasons." The number actually examined, one hundred forty-three thousand eight hundred and ninety-eight, of these, seventy-six thousand one hundred and sixty-two were found incapable of work. Thus of the original four hundred ten thousand nine hundred and three, five-sixths were palpably frauds. This wholesale malingering is resulting in the moral depredation of the individual physician, the Birmingham *Medical Review* wrote recently.

3. Every Pannel physician must make complete records of all transactions and forward them to the Ministry of Health, and after they have been reviewed, if in any case the ministry thinks that the conduct of the doctor deserves it, he may impose a monetary penalty on him, and, if so desired, may remove him from the pannel. In most countries no one concerned is satisfied with the way the insurance scheme works. In Great Britain it was called a fraud on the insured because of the incompleteness and the unsatisfactory manner in which the medical services were provided at the outset. In one of the lectures given in America by Sir Arthur Newsholme he characterized the British system as having been done "ill advisedly," in his judgment. It continued a false and low ideal of isolated general medical practice.

In the *British Medical Journal*, January 2, 1932, we read: "National health insurance was begun in response to a worthy expression of national sentiment. It has grown until some sixteen million persons are affected out of a population of forty million, and has become a potent force in race culture and survival of the nation. Uncontrolled sentiment will enable it to destroy the nation it was meant to save."

But there are those who pour oil on the troubled waters and try to assure us there is no alarm. We should not be deceived. In the last report of Hospital Service of A. M. A., of the nine hundred fifty-five thousand eight hundred and sixty-nine hospital beds in the United States, sixty-three and eight-tenths per cent are government owned, and that seventy-one per cent of hospital patients are in government hospitals. In the transactions of the American Hospital Association for 1931 it is stated there are about four hundred and fifty thousand hospital beds in the United States. For the acutely sick, of this number about forty per cent are under government control. What further evidence is required that we may know that the hand of socialism is dealing a subtle blow to free medicine in America, and that we are soon to follow in the trail of those countries, once proud of their professional independence and individualism, from whom sprang many discoveries and truths that made us sit at their feet and take counsel?

From our capital city at Washington we hear daily the pathetic, yet meaningless, cry: "We must preserve our social and economic system." Let us be not deceived. Rightly interpreted, it means: "Let us build higher and higher our political fences."

In the last twenty years our national income has risen from thirty billion dollars per annum to ninety billion dollars per annum, and it is fair to conclude that medicine has not shared in the utilization of that increased income as much as its value justifies. The expenditures of the American people for luxuries and nonessentials are about five and a half times as much as the total cost for medical care of our sick. We spend three times as much for tobacco and twice as much for candy as we do for physicians.

I think it would be conservative to estimate that about fifteen per cent of the medical and surgical services rendered by the physicians of the United States is contributed freely by them to charity, and that about twenty per cent of the remaining services are never compensated for. What philanthropist, social worker, or politician can rightfully demand that we do more, since we are American citizens, amenable to taxes, social and civic obligations, just in the same proportion as those to whom we render service?

Organized medicine has endeavored at all times to raise their standard of efficiency, improve their personnel, and render a more accurate and scientific service to their clientele. This has been done at an enormous expense to the profession, with no increase in burden to the people they serve. Our pride of achievement and advancement, our consciousness of loyalty to our high standards of ethics and sacrificial service to our fellow man, have been abundant reward. So long as the policies of medical practice remain in the hands of medical men of this and similar organizations, these advancements will go forward; but when we surrender them into the hands of laymen and politicians, we have surrendered our birthright and have severed our sacred and personal contact with those we serve, our zenith will have been reached, the bright pages of our history will be recorded, the morrow will be a day of which the most optimistic will not be proud, and our guilty socialist will cry for the return of the good old days of the family doctor. Our only hope lies in aggressive medical citizenship concentrated against this socialistic tendency that is gnawing at the very heart of our republic. Coming as evil spirits come, disguised in a robe of righteousness, with outstretched hands dripping with blood and pleading its mission of humanity and duty to an unfortunate people, or with the plea of philanthropy from one who has spent a life in a self-serving manner, accumulating millions that are dripping with blood and stained with sweat of toil and starvation by those who have served him through a long business career; and when the evening shadows begin to shorten, something begins to tell him he is an empty vessel and owes all he has to humanity, and, like Macbeth, he holds out his hands and cries, "Out, out, damned spot!" and then begins to establish free clinics, and in a ruthless extravagance, void even of good business principles, begins to purchase his redemption. Not all philanthropy is evil, and that which is wisely directed is to be commended. And, as a profession, we should recognize this and be charitable to such endeavors.

Our greatest weapon of defense lies first in setting aright our own household, shedding off our shells of selfishness and shortsightedness, and cease bickering about little things and get a vision of a national brotherhood and see the needs of one hundred and twenty millions of people instead of our own little clientele and ourselves start our educational program in our local and county societies, instill higher ethical standards, promote more cordial relationship, inspire greater confidence, and improve our personnel. We should be bigger than any syndicate or corporation and forbid ourselves from being owned by them. We should be stronger than any politician and feel free to make constructive recommendations to him. The fact that we are physicians does not alter the fact that we are American citizens. We should prize that privilege greatly, and we can dignify it in no manner higher or more patriotic than by rendering a sacrificial service to our people through the noble ideals of our profession and by holding inviolate the sacred principles of our democracy.

OTHER REFERENCES

1. William Damishek, M.D., *New England Journal of Medicine*, June 4, 1931.

2. London Letter, J. A. M. A., October 18, 1930.

3. G. F. McCleary, M.D., Dept. Senior Medical Office of the Ministry of Health, London, Official Bulletin, 1930.

PROBLEMS IN THE TREATMENT OF OBSTRUCTIVE LESIONS OF THE BILIARY TRACT*

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PROBLEMS occurring in the treatment of obstructions of the biliary passages are concerned with hepatic function and infection of the gall bladder. Successful results following surgical procedures in such cases are dependent on accurate recognition of factors producing the obstruction, their complete removal, and the ability of the liver to resume its normal activities. With these purposes in view, suggestions relative to the recognition of some of the less well known, yet equally important, types of obstruction and their physiologic, pathologic, and chemical associations, would seem to be of interest.

INTRAHEPATIC OR EXTRAHEPATIC OBSTRUCTIONS

If jaundice is caused by obstruction, it should be determined whether the obstruction is intrahepatic or extrahepatic. Probably the simplest method of making the distinction can be expressed as follows: In a case of painless jaundice, in which the amount of bile in the stools or duodenal content is normal and the gall bladder is not palpable, the possibilities are that the obstruction is intrahepatic. In a case of jaundice following attacks of biliary colic, or accompanied by chills and fever or painless jaundice, with absence of bile in the stools and a palpable gall bladder, the obstruction is most likely to be due to a lesion of the extrahepatic bile ducts. From the standpoint of differential diagnosis of lesions obstructing the common or hepatic bile ducts, it might be emphasized that biliary colic, followed by jaundice, with or without chills and fever, is indicative of intermittent obstruction of passage of bile from the liver to the intestine. This is true whether the cause of the obstruction is stone in the common or hepatic bile ducts, tumor in the head of the pancreas, or stricture. Furthermore, painless, obstructive jaundice may be brought about by the same causes. It has been said that no one is infallible in making a differential diagnosis of obstructive jaundice. The diagnosis is always difficult, and the chance of saving a life is so important that no matter how positive the evidence of a malignant lesion may be, exploratory operation is advisable if the patient's condition will permit of such a procedure with reasonable safety.

CALCAREOUS OBSTRUCTIONS OF THE COMMON BILE DUCT

These obstructions are of two types—those in which marked infection in the walls of the common bile duct, in the liver and pancreas are associated with stones in the common bile duct, and those in which these marked secondary inflammatory changes are absent. The greatest source of error in surgical treatment of cases of stone in the common bile duct, I believe, has been failure to recognize them.

A statement attributed to a celebrated foreign surgeon, that the presence of stones in the common and hepatic ducts could always be recognized by palpation of the duct, would seem to be fallacious; for on many occasions, even after the most painstaking, but unsuccessful, efforts to determine the presence of such a stone by palpation, a scoop introduced into the lower end of the common bile duct has brought forth a small stone from the ampulla. The presence of a scoop inside the duct assists one greatly in palpating such stones. Likewise, whenever the size of the duct permits, a finger introduced into the duct, carried as high as possible toward the liver and downward to the ampulla, is the best means of eliminating the possibility of stones remaining.

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*Read before the Tennessee State Medical Association, Memphis, April 12, 13, 14, 1932.

A few words relative to the size and appearance of the common bile duct: The presence of a stone or stones in the duct always manifests itself by increase in the size of the duct, or by inflammatory changes in its wall. In such cases, even in the absence of a history of jaundice, such a duct should be opened and carefully explored for stones. Shall it be said, then, that if the patient is jaundiced at the time of operation, or has given a history of intermittent jaundice, or of chills and fever in association with other evidences of disease of the biliary tract, that the burden of proof as to whether there is a stone in the common bile duct rests directly on the surgeon? Even with the history of jaundice or of chills and fever lacking from the patient's history, the findings of an enlarged common bile duct, the walls of which may or may not be thickened, should indicate the necessity of opening it and exploring its interior.

It has seemed advisable to consider briefly the differential diagnosis of intrahepatic and extrahepatic obstructive lesions, as well as of calcareous obstruction of the common bile duct, in order that undue emphasis may not seem to be placed on the less common type of biliary obstruction which I wish to describe rather more at length. I refer to inflammatory, noncalcareous obstructions of the common and hepatic ducts, the result of cholecystitis. This subject is not well understood, and the results of operative treatment may perhaps have been somewhat speculative.

Noncalcareous Inflammatory Biliary Obstruction Associated With Cholecystitis

Infection of the walls of the gall bladder extends both by continuity and through the lymphatic channels to the common and hepatic bile ducts, the liver, and the pancreas, producing obstructive jaundice.

In a group of 224 cases in which I have operated in the last eight years for inflammatory, benign lesions, or calcareous obstructive lesions of the biliary tract, twenty-seven jaundiced patients have been operated on, at which time badly diseased gall bladders (usually the site of subacute inflammation with or without stones) were present, but stones were not found in the common bile or hepatic ducts. The appearance of the wall of the common bile duct was similar to that of the gall bladder due to inflammation. The other structures in the hepaticoduodenal ligament adjacent to the common bile duct were the site of unusual evidences of inflammation, characterized by edema and thickening. The head of the pancreas was enlarged and somewhat nodular, with a brawny induration which cannot be mistaken when one once palpates it. The liver is usually changed from its normal bluish-green to a color more nearly like a muddy brown, with the lobules of the liver standing out as punctate spots. When the common bile duct is opened for exploration, bile, containing variable amounts of grossly visible white fluidlike pus, is found, cultures from which reveal a gram-negative bacillus of the colon type.

Cholecystectomy in these cases, with prolonged drainage of the common bile duct by a T-tube left in from seven to eight weeks, has been followed in most cases by excellent results for periods up to six years subsequent to operation. By excellent results, I mean that the attacks of biliary colic, with jaundice or chills and fever, have ceased, and the patients have returned to their former good health.

Of considerable interest were six patients in this group who had previously undergone cholecystostomy, which directs attention to the recurrence of inflammation in the gall bladder subsequent to cholecystostomy, even though obstruction due to stones in the gall bladder is lacking. Furthermore, extension of this infection in the walls of the previously drained gall bladder has produced sufficient infection through the biliary passages in the liver and in the head of the pancreas that other evidences of biliary obstruction, such as jaundice, chills, and fever, manifest themselves.

Removal of the gall bladder and prolonged drainage of the common bile duct removed the original focus of infection, following which secondary infection in the walls of the common bile duct, intrahepatic ducts, and pancreas have a chance to subside.

Bile then passes into the intestine without obstruction.

The value of drainage of the common bile duct in these cases seems to me to be somewhat similar to the advantages of preliminary drainage of the urinary bladder when prostatic enlargement has produced acute urinary retention. The inflammatory swelling and edema associated with fibroadenomatous hypertrophy subsides to the extent that the gland may decrease to half its original size. In other words, with the infected gall bladder continuously keeping up the infection of the biliary passages and the pancreas, sufficient obstruction is present in the pancreas and sufficient infection in the liver, so that the bile is hindered in its passage into the intestines, and a vicious circle is established in that the greater the degree of infection, the more the obstruction and the more the infection in the liver.

In these respects particularly the following three brief reports of cases are illustrative:

Case 1.—A man, aged sixty-seven years, was operated on, one and a half years ago, at which time a thickened, contracted, infected gall bladder was found, and an enlarged, thickened, and inflamed common bile duct, 1.75 cm. in diameter, was opened and explored; stones were not encountered. The head of the pancreas was the site of considerable brawny induration and enlargement. Following cholecystectomy and choledochostomy (a T-tube being left in place for eight weeks), he has gained in weight and has had no further colic and no chills, fever, or jaundice. He had undergone cholecystostomy in 1902 elsewhere, following which he was in good condition until January, 1930, at which time he had severe biliary colic, followed by jaundice, with clay-colored stools, and loss of ten pounds. At the time of his operation he was jaundiced, and the value for bilirubin was 5.6 mg. in each 100 c.c. of serum.

Case 2.—A woman, aged sixty-six years, was operated on March 17, 1932. She had had intermittent biliary colic for forty-three years. In September, 1930, the colic was followed by jaundice, which lasted two months. In November, 1930, she underwent cholecystostomy elsewhere, at which time forty stones were removed. With bile draining from the gall bladder, the jaundice subsided; but when the tube was removed from the gall bladder and the fistula closed, recurrence of epigastric pain and jaundice occurred. In 1931 an abdominal exploration was performed elsewhere, at which time external biliary drainage was again established. This was allowed to continue for one month; then healing of the incision occurred. This was immediately followed by severe epigastric pain and jaundice, which persisted. When the patient was admitted to the hospital, there was evidence of marked toxemia, characterized by mild toxic psychosis and a slightly stuporous manner. The concentration of bilirubin was 1 mg. in each 100 c.c. of serum, and the leukocyte count was increased to 12,000. On test of hepatic function, retention of dye was graded 3. At operation, subacute, purulent cholecystitis, graded 4, with choledochitis and purulent cholangeitis and pancreatitis, were found. The common bile duct was three times normal size; its walls were thickened and inflamed, and large amounts of pus were present in the bile. On culture of this pus, gram-negative bacilli were isolated. The liver was congested, the lobules standing out as punctate spots, and the head of the pancreas was enlarged and nodular. Cholecystectomy was performed, and the common bile duct was drained with a T-tube. The patient's convalescence was uneventful until the sixth day subsequent to operation, when she appeared to be somewhat listless and slightly drowsy. Intravenous injection of 10 per cent solution of glucose was followed by immediate return to her former satisfactory condition, and her convalescence from that time was uneventful, complete recovery occurring.

Case 3.—In June, 1929, a patient died from bronchopneumonia sixteen days following cholecystectomy and choledochostomy. She had had intermittent biliary colic over a period of three years, and jaundice had followed the attacks. The concentration of bilirubin was 4.5 mg. in each 100 c.c. of serum at the time of operation. At operation, chronic cholecystitis with stones was found. The gall bladder was removed, the common bile duct was enlarged, and was opened and explored, but no stones were encountered. There was marked thickening in the head of the pancreas, and the common bile duct was drained with a T-tube. At necropsy were found chronic pancreatitis with fatty necrosis, dilatation of the common bile duct to grade 2, with no stones present, and fatty changes 3 in the liver.

Biliary Obstruction Due to Large Ulcers of the Posterior Wall of the Duodenum, Penetrating Into the Pancreas

Ulcers of the duodenum that occasionally are overlooked are those involving its posterior wall. Particularly is this true if the ulcer has not extended around to the anterior wall of the duodenum, or if it is situated at a distance of 1.5 to 2.5 cm. below the pylorus, a position relatively inaccessible to visualization by fluoroscopic or roentgenographic examinations. Such ulcers in the posterior wall are perforative, and craters extend into the pancreas, surrounding which sufficient inflammation occurs in the pancreas to produce enough obstruction of the pancreatic portion of the common bile duct so that jaundice occurs.

In one such case, sufficient disturbance occurred in the pancreas from the perforation of the duodenal ulcer into it that areas of fat necrosis were present in fat adjacent to or overlying the head and body of the pancreas. For the most part, these patients, instead of having the usual symptoms of dyspepsia associated with ulcer, have attacks of severe epigastric pain radiating through to the back, and frequently followed by jaundice. This is a group of symptoms identical with that of biliary colic and obstruction of the common bile duct, so that a preoperative differential diagnosis is difficult or impossible. Furthermore, the low position and inaccessibility of the ulcer does not permit of its visualization on fluoroscopic and roentgenographic examinations, and the finding at exploration of a normal-appearing anterior duodenal wall is misleading. Unless the possibility of a perforating ulcer of the posterior duodenal wall be kept in mind and the posterior wall of the duodenum carefully palpated, the lesion is likely to be overlooked. In eight lesions of this type which I have operated on, craters were large enough to admit the end of one's forefinger, and the size of the lesion was such that palpation of the posterior wall of the duodenum immediately revealed their presence. Occasionally these patients give a history of intermittent melena, and not infrequently their gall bladders have been previously operated on without relief of symptoms. The finding of a common bile duct of normal size or normal appearance in such cases eliminates the possibility of a stone in the common bile duct; yet wherever there is a question regarding possible coexistence of the two lesions, the common bile duct should be opened and explored.

Time does not permit of discussion of the procedures indicated in the surgical treatment of such ulcers. However, their very large size and inaccessible situation, in my experience, have seemed to be excellent reasons for gastro-enterostomy, the results of which have been very satisfying.

Estimations of Hepatic Function

The life of each patient with biliary obstruction, other things being equal, is dependent on the function of the liver subsequent to operation. In 879 operations for benign lesions of the gall bladder and biliary passages performed in the clinic last year, the mortality was 3.6 per cent. This includes operations on 116 jaundiced patients and on 297 with a history of jaundice who were operated on for stones in the common bile duct, for stricture, and for biliary fistulas.

Ten of the 879 patients failed to recover, due to hepatic insufficiency. It seems necessary, therefore, that the problem of hepatic function be paramount in our study of such cases. It seems advisable that accurate notes be kept of the results of the various tests of liver function prior to operation, and that careful and accurate descriptions be made of the condition of the liver and biliary passages, and of the pancreas at the time of operation. These, when correlated, may indicate the functional activity of the liver and the margin of safety of various operative procedures. The size, color, conformation, and consistence of the liver should be noted, and a comparison should be made between the changeable appearance of the liver under different conditions of obstruction, of infection, and of duration of jaundice. The color, quality, and quantity of the bile are very important.

Abnormal Prolongation of Blood Coagulation

I have had the opinion for some time that an abnormally prolonged blood coagulation time indicated an unusually severe disturbance of hepatic function. Such a prolonged coagulation time may exist, also, in patients with mild degrees of jaundice. I am reminded of a recent case—that of a man with a palpable, indurated gall bladder and a history of colicky abdominal pain occurring over a period of only one year. Although his skin showed but a slight tinge of jaundice and bilirubin in the serum measured only 6 mg. in each 100 c.c., the coagulation time of his blood was thirteen and a half minutes. Bromsulphalein was retained in the blood to a maximal degree. At exploration, a carcinoma of the gall bladder was found, with most extensive metastasis to the liver, involving both lobes. In this case, the elevated coagulation time of the blood, and the inability of the liver to excrete bromsulphalein, indicated considerable disturbance of hepatic function. At operation there was quantitative replacement of hepatic tissue with massive metastatic growth.

In another case, previously mentioned, in spite of a minimal degree of jaundice (the concentration of serum bilirubin was 1 mg. in each 100 c.c. of blood), retention of bromsulphalein was graded 3. At operation many abnormal changes were found in the liver, and colon bacilli and pus in the bile.

Appearance of the Liver

If physicians were asked to describe the color of the normal liver, it would be difficult for an artist to understand the standard of normality. As a basis of comparison, even though perhaps an inaccurate one, it might be said that the normal liver is a mixture of violet brown, that its visible lower margins are sharp and knifelike, and that its consistence is about that of the skin and subcutaneous tissue of the thigh when grasped between the fingers.

Infection within the biliary passages, with obstruction, causes induration of the liver, so that one might speak of it as being "blocklike" in nature. The sharpness of the margin of the liver is lost, and a rounded contour is present, with the color, in the early stages of abnormality, more nearly a light, muddy brown. Later, after the obstruction has become more complete and has endured longer, the liver may take on a Paris-green appearance. In either instance the individual hepatic lobules may stand out as punctate spots, and I have always been fearful of the outcome following operations on patients whose livers had such a Paris-green color, especially when the lobules were well defined. Time does not permit more than brief reference to these changes in hepatic morphology which result from infection and obstruction. That they do afford an index of the condition of the liver seems certain.

The Appearance, Character, and Quantity of the Bile

Bile of normal golden color is practically never found when stones occupy the common or hepatic ducts. Various colors are seen, such as greens and browns and white, and the color is attributable to the concentration of bile pigment and cholesterol in the bile. The significance of so-called white bile, really a misnomer for colorless waterlike bile, has been described by Judd, Rous, McMasters, and others. Recently in two of my cases, bile drained from the intrahepatic ducts was truly white, resembling cream.

From study of the bile, knowledge along two important lines can be gained. The amount of bile excreted through a tube placed in the common bile duct usually varies from 300 to 600 c.c. each twenty-four hours. Concern must be felt should the quantity exceed that amount, for depletion of body fluids and tissue chlorides is then likely to occur, and dehydration toxemia to appear unless adequate provision be made to overcome the loss by administration of physiologic sodium chloride solution.

Greene and I studied the character and composition of bile drained in three separate types of cases—namely, cases of stone, of stricture, and of tumor of the head of the pancreas. We found that although little variation occurred among cases in each group, yet differences were noted when comparison was made between different groups. Since this material has been published, there is no need to say more here than that patients in one group excreted ten times more sodium chloride and three times more fluid than patients in either of the other two groups, and that the rate of appearance and concentration of the biliary acids formed an excellent index of the hepatic function.

SUMMARY

Attention is directed to the effects of cholecystitis on the liver, on the common and hepatic ducts, and on the pancreas, and to the beneficial effects of cholecystectomy, with prolonged drainage of the common bile duct, as has been noted in a group of patients who were jaundiced at the time of operation, but in whose common or hepatic ducts there were no stones.

It is pointed out that penetrating ulcers of the posterior duodenal wall perforating into the pancreas, produce a group of symptoms which simulate biliary obstruction. Frequently these ulcers pass unrecognized because of the normal appearance of the anterior duodenal wall.

Other significant matters of which account is taken are an abnormally prolonged coagulation time of the blood; a change in the color, consistence, and conformation of the liver; and a change in the color, quantity, and quality of bile that drains out. These seem to be indexes of hepatic function.

PERSONALITY AS A FACTOR IN THERAPEUTICS*

W. O. Brickell, M.D., Friendsville

THE personality of a physician is an important asset in the make-up of his professional equipment.

The achievement of personality is the goal sought by every one beginning the study of medicine, and everything pertaining to medical thought, colleges, books, hospitals, clinics, operations and laboratories furnish the environment and educational factors which collectively go to convert the aspirant into the type of genus homo known as a physician.

Aside from his scientific medical training, the personality of the physician is the greatest factor in the make-up of his professional armamentarium. So much so is this true that we often hear the expression that "The physician is born, not made." Such an expression usually implies that there is an inner quality of personality, which manifests itself in the dealing of a physician with his patients, that does not exist equally in all men equally trained in professional knowledge. There seems to be an inner spring or quality of character that counts when such men are put to the test in the office, or at the bedside, in daily intercourse with others, on any and all occasions, which is essential to the successful practice of medicine.

There is in every one a quality of personality that either attracts or repels others. It is not necessarily an accompaniment of any special type, or physique, or nervous organization. It is found in men of small build and of neurotic type as well as in those that are robust, phlegmatic, and heavy. Such men frequently make serious blunders in their professional work, but still they hold the people.

Invariably those of the medical profession who are competent men, and who possess the happy streak of personality are making a success of their work.

A little display of those qualities typified by the great reformer about two thousand years ago—kindness, sincerity, sympathy, earnestness, fearlessness, bravery, magnanimity, and altruism—is an inestimable element in the personality of the physician. It helps to get control of people—not by force—and better enables him to put them in possession of themselves.

Here is the clue to the explanation of that indefinable psychic quality that the successful physician carries with him which proves a power in therapeutics, and this is manifested all unconsciously by him in every move of his life. It begets the confidence and trust of his patient, and the respect and co-operation that is a most essential factor in the successful treatment of any disease.

Especially is this quality in the physician necessary in the treatment of enlightened and self-respecting people. It begets a reciprocation of that respect which such people feel is due them. They positively refuse to be driven, but it is only an evidence of their high intelligence when they are willing to be led for their own good by the skillful direction of a cultured, competent, conscientious physician.

A sensible display of tact and diplomacy will often enable a physician to win the confidence of a patient, and thus secure the cooperation so essentially necessary for the best results, when being too blunt and abrupt would render him utterly helpless.

To see one physician so manage a little fellow as to induce him to submit to the examination, (minor operation) with hardly a whimper by his firmness, and kindness, and tactful persuasion, where another would become nervous and excited, and spend a much longer time in accomplishing this result, his patient crying and suffering a needless amount of pain on account of his resistance, is an illustration of what personality means in a certain class of work.

It is a great help to a physician to be able to get hold of people and use them to help themselves to get well. We all help or hinder the recovery of our patients, far more than many realize, by the way we deal with them.

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*Read before the Blount County Medical Society, Sept. 24, 1931.

It is a great thing to be able to make a hair-splitting diagnosis, the correctness of which is infallible, and we shall unceasingly strive to attain such proficiency.

It may also be a great satisfaction, and it is of unquestionable benefit to the physician who can do it, to give a minute and detailed delineation and description of pathology of a disease to the satisfaction of his professional associates, but such an elucidation is never of value to the patient.

Physicians themselves become the easy victims of any disease as soon as they become conscious of the seriousness and gravity of the diagnosis rendered by their colleague in attendance. Their very knowledge of its etiology and pathology renders them unduly self-conscious of their condition, and such self-consciousness gives rise to morbid mental states that inhibit the normal physiological process, prevent sleep, and seriously retard recovery.

When we see a physician sick and a half dozen of his learned colleagues lined up around him, all rendering him more self-conscious of the seriousness of his condition, if only one of them had been called, and that one possessing those qualities of personality that, in spite of the physician's knowledge of pathology, could drive back those existing morbid sense impressions, and substitute in their stead mental states that would enable him to put up a more creditable fight. If the life of a physician is worth anything, the end would justify the means. So, while giving due appreciation to scientific professional knowledge and training in pathology and diagnosis, what is of far greater importance is that we so use our knowledge as to help our patients get well.

Every visit of the physician is an opportunity to help accomplish such a result, and here is where the personality of the physician is often detrimental or helpful to the recovery of the patient. The very self-consciousness induced by a physician at his visits, and the mental states which follow in consequence of such an induced self-consciousness, are the deciding factors for the good or harm of the patient. The influence of personality is contagious. We set up mental states in others around our patients that prove helpful or harmful in the sick room.

In order to make myself understood, I will give you an illustration of how personality is abused in the practice of medicine, and the picture here presented is an apt illustration of the conduct of many of the general practitioners, who do not take into consideration the psychological factor in therapeutics.

All observing individuals have noticed that in every locality there are physicians who have more "very sick" patients in proportion to their patronage than others. That the personality of a physician is frequently the prime factor in producing these "very sick" patients is beyond question.

Here is an illustration of the usual conduct pursued by such men in the treatment of an ordinary case; we will say of pneumonia, a disease in which the correct use or abuse of the personality of the attending physician, more than in any other acute disease, determines the recovery or non-recovery of a patient.

"Give this medicine very carefully, and watch her closely until I see her again. I will call this evening."

True to his promise, he is punctual in fulfilling his appointment, much to the satisfaction of the family, who anxiously awaits his coming. During the day the sick mother has grown more nervous, her temperature is higher, and her pulse rate is faster. She is by this time over-anxious about her condition, and this in turn has made her family extremely anxious about her.

The physician has, by his conduct, demeanor, words, and actions, made a strong impression upon both patient and family, and the fear that he has thus implanted into the minds of all in the household has kept up a depressing influence which has got in its effective work upon the patient.

The patient in question is suffering with acute pneumonia. She feels a decided pain upon breathing, experiences a sense of suffocation, and the paroxysms of coughing have rendered her decidedly conscious of her illness, and now the physician in whom she has put her trust has looked serious and given directions in a way that speaks louder than words in unduly exciting her. Not one word has he said to allay her anxiety, soothe her mind, assuage her fears, or inspire hope.

Upon his second visit he finds his patient decidedly worse, as might have been expected, and now he is serious sure enough. His fatalities in the treatment of pneumonia have been particularly large, and he much dreads this disease; and, seeing his patient with a higher fever, a more rapid pulse, and remembering his past record with such cases, he makes no effort to conceal his gloomy forebodings.

Again giving directions for the night, he starts for his conveyance, and when out in the hall the members of the anxious family, who have followed him, turn with anxious faces and inquire, "Doctor, how is mother?"

"Very sick, very sick," is his reply. "Watch her carefully tonight. Keep the house as quiet as possible, and, if she should get worse before morning, be sure to call me."

Before the next day he has been called, for his patient has been unable to sleep, and from his point of view a hypodermic of morphine is decidedly indicated.

On and on this method of management goes, and if finally his patient recovers after two weeks of severe illness, which she might possibly have done in spite of her physician, that family is grateful to God and the Doctor for having "pulled her through." Had he not been called in time, a great disaster would have occurred!!

There is more or less mental depression in all patients as the individual is rendered painfully conscious of his helpfulness. This results in fear, and such sufferers enjoy sympathy as they enjoy morphine, which inhibits the normal physiological processes and stealthily lessens their resistive powers to the disease. No worse influence can be exerted over the patient than the presence of a highly emotional person, who lavishly pours out sympathy to the destruction of all the optimistic and strengthening qualities of mind and body. So great are the influences brought to bear by the mind over the physiological processes of the body that a physician who unconsciously uses the power of presonality to the detriment of his patient actually makes a very serious condition out of a trivial disorder.

On the other hand, by the intelligent and judicious use of one's personality we can make a very trivial disorder out of a seemingly serious pathological condition, so far as the results are concerned.

A man who practices medicine in that way, by abuse of his personality, may make money, but he also encourages the business of the undertaker. He can be excused only upon the ground of ignorance, and deserves to be placed in the class of the quack and the charlatan.

The injury done to the unsuspecting public by physicians who are ignorant of the use and power of personality is far greater than is commonly supposed. Whole communities have become fear-stricken by the exaggerated serious reports of this class of physicians, who frequently ride day and night to see the victims of their perverted influence. Their very influence in the community in which they live spreads like a contagious disease, emanating from a focus, which stealthily moves among them, reaping financial rewards for their indiscretions.

"Very sick, very sick," is their watchword as they implant fear in their trail.

While the laity are being properly educated in the necessity of self protection from the contagiousness of tuberculous disease, malarial, dyphtheria, typhoid, and yellow fever carriers, and other infections, for the safety of their own lives they should also be protected from that pest to any community—the physician who unduly exaggerates the condition of his patients by reporting all cases as being "seriously ill."

CONGENITAL MALARIA (WITH REPORT OF CASES)

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FOR many years the question of congenital malaria has been the subject of controversy. So many doubted the possibility of its occurrence that in most of the textbooks the matter was given no consideration until in recent years. By most anatomists and other investigators it was said to be impossible for the plasmodium to be transmitted by the mother to the fetus through the placenta, because the maternal and fetal circulation normally are distinct and separate from each other. Most research workers in malaria are now agreed that congenital infection is very rare, though not impossible. But Blacklock (1) believes that although the malaria plasmodia may be found in the placenta, they cannot penetrate from the maternal capillaries into the fetal circulation. In his studies he examined a number of sera from pregnant women, and later the placental sera, and found that the plasmodia could be demonstrated much more frequently in the placenta than in the peripheral blood. In his cases he found 17 per cent plasmodia in the blood and 46 per cent in the placental circulation. The plasmodia also increased more rapidly in the placenta than in the peripheral blood, which latter finding would seem to indicate that the malaria plasmodia find in the rich placental circulation, unaffected by temperature and physilogical changes to which the peripheral blood is subjected, an unusually good field in which to develop and incidentally to effect a certain amount of destructive tissue changes, for certainly in every severe infection delicate body structures are injured. Malariologists are fully cognizant of the irreparable damage often wrought in severe malarial injuries. It would seem foolish, then, to assume that the placenta escapes malarial injuries, while in the brain, liver, spleen, and other organs, even fatal harm may result. Blacklock later reported that in 173 pregnant women he found the malarial parasite in the blood in 12, and of 150 puerperal women the plasmodia were present in the placentas of 55. He did not find malaria in the newborn children of the infected women. He believed that those children possessed of certain amount of immunity which slowly disappeared during the early weeks of life. In his observation the first postnatal infection took place after three weeks. In his view, cases of so-called "malaria-transmission" through the placenta are really due either to a very early infection through a mosquito bite or to an injury to the fetus and consequent transmission through the maternal blood. The mortality was higher in the newly born children of malarial mothers than in those whose mothers were not infected, which might seem to indicate that the ante-partum and post-partum state of health of the infected mothers was so poor that the children were undernourished in utero and postnatally, or that a certain amount of placental injury rendered proper nutrition impossible, or that in some of the cases infection had really occurred in utero, and escaped subsequent diagnosis when the peripheral blood was examined. As in some cases, especially of the æstivo-autumnal type, the parasites, which are mostly localized in the internal organs, escape detection when the peripheral blood is examined. According to Concetti (2), a mingling of the maternal and fetal blood in placental infarcts or injuries during birth is conceivable. And Pies (3) believed that he observed an undoubted case of congenital malaria in the child of a mother ill with malaria, which was born in the absolutely malaria-free district of Charlottenburg. Mayer (4) considered that malaria in the newly born is very common shortly after birth, and in some cases is due to the transmission of congenital infection through the placenta. The great pediatrician, Holt (5), in citing Crandall's case, said: "There seems little doubt that the disease was contracted in utero; for ten days before delivery the mother had suffered from a tertian intermittent of moderate severity. Eighteen hours after birth the child was noticed to have cold hands and feet, blue lips and nails, and a pinched face. These symptoms lasted about half an hour, and were followed by a distinct fever. Upon the following day the paroxysm was repeated. Examination of the blood of the mother and the child revealed the malarial organisms in both cases." Manson-Bahr (6) says concerning the transmission of the malaria parasite to the fetus: "Under favorable conditions the transmission of the parasite to the fetus from an infected mother has been known to occur. There are several authentic instances of intrauterine infection having taken place in England." Ruge, Mühlens, and Zur Verth (7) also state that congenital malaria occurs. And Weselko (8) in 1926 reported 14 cases of newly born children in whose blood malarial parasites were found. The children reacted well to quinine, but their mortality was relatively high —viz., 35 per cent—as in the cases of infants born to malarial mothers reported by Blacklock (1). In a personal communication to the writer from a distinguished anatomist, Dean C. W. Poynter (9), he says: "As to the permeability of placenta, we have studied that here a great deal. I do not feel that the question has been settled either way. Certainly it would seem possible for transmission of plasmodium to occur in an injured epithelium, or as carried by phagocytic cells. About the time you graduated, or maybe a little later, we had a case here that I was able to prove tuberculosis in the fetus of seven months, whose mother had miliary form. That, I assumed, was a direct transmission by permeability. Dr. Warthin, of Michigan, has also reported similar cases. We are not satisfied as to how freely leukocytes pass from one side to another. It is reasonable to me that they may occasionally pass. There are many evidences from a serological standpoint that there is no normal free interchange between the maternal and fetal blood streams. In other words, no common circulation." Concerning the passage of leukocytes from the maternal into the fetal circulation, the emident anatomist, Gray (10), has said: "There is evidence that the maternal leukocytes may migrate into the fetal blood, since leukocytes are much more numerous in the blood of the umbilical vein than in that of the umbilical arteries." Those who have made a study of malaria are aware that leukocytes sometimes become infected with the malarial parasite. Probably this occurs much oftener in the heavy infections than in those which are less severe. As more of the plasmodia are found in the placenta than in the peripheral circulation, it would seem reasonable to assume that more infected leukocytes could be demonstrated in the placenta than are found in the peripheral blood. At the height of any pathogenic infection more of these so-called "policemen of the blood" are found at the site of greatest injury than can be demonstrated elsewhere. It is possible, then, and to the writer it seems highly probable, that a majority of the cases of congenital malaria are caused by the passage of malaria-infected leukocytes from the maternal to the fetal circulation through the delicate walls of the placental villi, which are much thinned out after the fifth month of pregnancy, so that the contained fetal vessels are covered only by a thin layer of mesoderm, consisting of gelatinous connective tissue, over which is a single layer of somewhat flattened ectodermal cells in direct contact with the maternal blood.

In the available references, most of the writers have concurred in the belief that congenital malaria is possible and does occur. But we should mention two others who hold Blacklock's (1) view that true congenital malaria is impossible and therefore does not occur. Ziemann (11) has expressed the belief that the migration of malaria sporozoites directly through the placenta into the fetal circulation is just as impossible as in the case of trypanosomes, since "under normal conditions the placenta is an impenetrable barrier for schizonts." And Kerley (12) believes that malaria may occur in very young infants, but is always of postnatal origin.

CASE REPORTS

The writer, over a period of four years, has found the following seven cases of congenital malaria both among American and Sino-Tibetan children. The climate here is subtropical, the altitude is over 9,000 feet, and malaria is endemic.

Case No. 1: L. M. B., female, American. The malaria parasite was demonstrated in her blood at 48 hours.

Case No. 2: Y. D., female, Sino-Tibetan. Aged 24 hours when the plasmodium was found in her blood.

Case No. 3: O. G. B., male, American. He was but 5 hours old when his blood was examined and the malaria parasite found.

Case No. 4: C. C. S., male, Sino-Tibetan. Blood examination made at 28 hours and the plasmodium of malaria found.

Case No. 5: R. M. D., male, American. Examination of his blood upon the second day revealed the presence of malarial parasites.

Case No. 6: H. J. K., male, Sino-Tibetan. At the age of 72 hours the malarial plasmodium was found in his blood.

Case No. 7: S. D. S., male, Sino-Tibetan. When he was 12 hours old, malaria parasites were demonstrated in his blood.

In these seven cases Wright-stained slides of the blood smears were examined under the oil immersion lens. Some of these cases were tertian and others quartan. Examination of the maternal blood at the same time as that of the infant revealed the same stage of intracellular development of the malaria parasites in mother and child. In some of these women attacks of malaria during gestation were severe, and in others only mild attacks were experienced. The mother of Case No. 2 had a severe attack, with general aching and high fever, on the first day of postpartum, and blood examination revealed heavy infection. At the same time the infant had severe diarrhea, but only a few parasites were found in its blood. The mother of Case No. 7 had a rather severe attack of malaria about ten days before term, which responded well to five-grain doses of quinine sulphate thrice daily. Twelve hours after labor her blood showed numerous malaria parasites, and more were found in the infant's blood than in most cases. The examination of blood taken from the umbilical cord at the end of the third stage of labor was also positive for the plasmodium. This was the only case in which we examined blood from the umbilical cord. All but two of these cases occurred during winter months, at times when no mosquitoes are to be found. Those two cases were examined within the first thirty hours. So none of these seven cases can be considered postnatal infections, for all were examined within the first three days of life. The shortest period of incubation found for malarial infection is five days. Anders (13) gives the findings of Bignami and Bastianelli, which were: experimental malaria of the quartan type; incubation period, fifteen days; tertian type, twelve days; and subtertian type, five days. Manson-Bahr (14) says: "As a rule, a successful malarial infection declares itself within a week or ten days." And York and MacFie (15) have shown that six days is the shortest parasitic incubation period in experimentally induced malaria either by inoculation of infected blood or by the bite of infected mosquitoes. Probably none would care to question the accuracy of the findings of the above-mentioned investigators. The writer believes the seven cases herein reported were true cass of congenital malaria, and that congenital malaria is not so rare a condition as many have heretofore believed it to be.

SUMMARY

In this bit of research, carried on during the past four years, I have consulted such literature upon the subject as has been available in this isolated point on the Sino-Tibetan border, and have found that most of these investigators concur in the belief that congenital malaria infection really occurs, although most of them consider its occurrence to be rare. Among those dissenting from this belief, Blacklock (1) through his studies has made a real contribution to the subject in his discovery that a much larger percentage of plasmodia localize in the plancenta than are found in the

peripheral blood. As considerable congestion and other pathological changes take place in the brain and other organs when large numbers of the malaria parasites have localized there, I have dared to assume that somewhat similar pathological manifestations could and do occur in the placenta during malarial attacks. During such a time, leukocytosis and phagocytosis is occurring, and it seems probable that one or more of these infected leukocytes or phagocytes could pass through the damaged wall of a placental villus and its contained capillary of the fetal umbilical vein, thus infecting the fetus. In this paper I have referred to cases of congenital malaria discovered by other investigators, and have reported seven cases demonstrated here during the last four years. Research workers in malariology have found that the incubation period in malaria in five days or longer. All of my seven cases were proven positive for malaria infection in the first three days of postnatal life.

CONCLUSIONS

1. True congenital malaria infection does occur.

2. Congenital malaria occurs more frequently than was formerly believed.

3. True congenital malarial infection is probably conveyed to the fetus by infected leukocytes passing through disease-injured platencal villi into the fetal circulation.

BIBLIOGRAPHY

1. Blacklock, Blacklock & Gordon, Am. Jour. Trop. Med. and Parasit., 1925, Vol. 19.
2. Concetti, Progag. antimal., anno 5, No. 4.
3. Pies, Monatsschr. f. Kinderheilk., 1910, Vol. 9.
4. Mayer, Exot. Krankh.
5. Holt, L. Emmett, Diseases of Infancy and Childhood, Seventh Ed., p. 1140.
6. Manson-Bahr, Philip, Manson's Tropical Diseases, Eighth Ed., p. 23.
7. Ruge, Mühlens and Zur Verth, Krankh. u. Hyg. d. Warmen Länder.
8. Weselko, Arch. f. Schiffs- u. Tropenhygiene, 1926, Vol. 30.
9. Personal communication from Dean C. W. Poynter, Univ. of Nebr., College of Medicine, Omaha, Nebr., October 6, 1931.
10. Gray, Henry, F. R. S., Gray's Anatomy, Twentieth Edition, p. 64.
11. Ziemann, Mense's Handb. d. Tropenkrankh, 1924, Vol. 3.
12. Kerley, Charles Gilmore, Practice of Pediatrics, Second Ed., p. 667.
13. Anders, James M., Practice of Medicine, Thirteenth Edition, p. 327.
14. Manson-Bahr, Philip, Manson's Tropical Diseases, Eighth Ed., p. 9.
15. York and MacFie, Tr. Roy. Soc. Trop. Med. & Hyg., 18: 13, 1 & 2, 1924. Citation by Jour. Am. Med. Ass'n., Vol. 97, No. 2, p. 125, July 11, 1931.

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LARYNGEAL TUBERCULOSIS WITH ALCOHOL BLOCKING OF THE INTERNAL LARYNGEAL NERVE DURING ADVANCED STAGE*

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TUBERCULOSIS of the larynx is the most common, fatal involvement of the larynx. It is particularly interesting on account of its high mortality, its frequency, the importance it bears to prognosis and because its presence usually makes certain the diagnosis of pulmonary tuberculosis.

Frequency.—Recent clinical statistics show that laryngeal tuberculosis occurs, associated with pulmonary tuberculosis, in from 4 to 12 per cent in early cases, 18 to 26 per cent in moderately advanced cases, 31 to 40 per cent in advanced cases, and 48 to 83 per cent in fatal cases. As on an average, the proportion of these with laryngeal tuberculosis was one in three.

Etiology.—Postmortem reports show that primary tuberculosis of the larynx is so extremely rare that for all practical purposes tuberculosis of the larynx is a complication of pulmonary tuberculosis.

Path of Invasion.—George B. Wood(30) states that "there are four possible ways by which the tubercle bacilli may gain access to the subepithelial tissues from the surface:

(1) Through the unbroken epithelium.
(2) Through the ducts of racemorse.
(3) Through traumatic abrasions.
(4) Through pathological epithelium."

Location of Lesions.—George B. Wood(30) reports that in 83 cases of laryngeal tuberculosis examined:

"(1) The epiglottis was involved in 59.
(2) The Aryteno-epiglottic folds in 58.
(3) The Ventricular bands in 42.
(4) The vocal cords in 48.
(5) The Arytenoid cartilages in 57.
(6) The inter-arytenoid space in 49."

"Of course it will be seen from these statistics that in the majority of cases of advanced laryngeal tuberculosis the greater part of the larynx is usually diseased."

Clinical Pathology.—Laryngeal tuberculosis may occur in different stages. F. R. Spencer(1) states: "The following classification is adaptable to most of the cases:

1. Vascular changes.
   (a) Anemia.
   (b) Hyperemia.
2. Infiltration.
3. Tuberculoma.
4. Ulceration.
   (a) Acute or active.
   (b) Chronic or sluggish.
   (c) Superficial.
   (d) Deep.
5. Edema.
6. Fibrosis.
7. Perichondritis.
8. Chondritis.
9. Necrosis.

The usual classification of acute, subacute and chronic must also be taken into account. Laryngeal tuberculosis is most always chronic from the beginning, but acute and sub-acute exacerbations are by no means uncommon."

Any combinations of the above stages often occur in the same larynx. Multiple tubercular lesions in the larynx are found more often than single lesions.

Sex.—Tuberculosis of the larynx occurs equally in both sexes if they are exposed to the same conditions. The majority of authorities find tuberculosis of the larynx occurs more often in the adult male. Most statistics show that laryngeal tuberculosis occurs twice as often in male as female. This is due to the use of alcohol, tobacco, exposure to dust and remaining in active business with pulmonary tuberculosis, and other occupational disadvantages.

Age.—Laryngeal tuberculosis occurs more often between the ages of 20 and 40, and is also met with less frequently under

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*Read before the Eye, Ear, Nose and Throat Section of the Tennessee State Medical Association, Memphis, April 12, 13, 14, 1932.

20 than over 40. Involvement of the larynx under 10 is very rare, but when it occurs, usually the pulmonary tuberculosis has run a very rapid course. The larynges of children are not exposed to alcohol or tobacco, and clinically they seem to have more resistance to laryngeal tuberculosis.

Prophylaxis.—The prevention of laryngeal tuberculosis must depend very largely for its success upon the early pulmonary diagnosis and the early arrest and cure of pulmonary tuberculosis and avoiding abuse of the voice.

Nationality. — Almost all nationalities are equally susceptible to laryngeal tuberculosis. Norman Bridge thinks that the Jewish race is less susceptible than any other nationality.

Examination.—In any case suspected of laryngeal tuberculosis a frequent, thorough examination should be made of the

1. Arytenoids.
2. Interarytenoid sulcus.
3. Epiglottis.
4. Ventricular bands.
5. Posterior laryngeal wall.
6. True cords.
7. Anterior commissure.

Differential Diagnosis.—Laryngeal tuberculosis must always be differentiated from

(1) Lupus.
(2) Syphilis.
(3) Carcinoma.
(4) Actinomycosis.
(5) Chronic catarrhal laryngitis.

Prognosis. — Laryngeal tuberculosis always offers a very gloomy diagnosis, because the mortality is so extremely high. Laryngeal tuberculosis has always offered a very serious prognosis for pregnant women unless therapeutic abortion is produced before the third month and not performed later than the fifth month. The Ascheim-Zondek test should be made on all women with laryngeal tuberculosis when they first suspect pregnancy.

Symptomology.—In early intrinsic laryngeal tuberculosis usually the first symptom noticed is slight hoarseness. This usually occurs in the morning, following coughing or use of the voice for ordinary conversation. This symptom occurs in about 80 per cent of the early cases. There is often a full feeling of the throat, and there may be noticed burning or smarting at times. Pain even at mealtimes is usually not noticed in the early intrinsic cases.

Usually the first symptom of the extrinsic type is slight pain, which is worse at mealtimes. The advanced cases are usually "mixed" types, extrinsic and intrinsic. In this stage there is marked hoarseness and severe pain on swallowing. The pain is so great in the advanced cases that the patient prefers going on a slow starvation diet rather than endure the excruciating pain on swallowing that occurs while trying to eat a regular normal diet.

Diagnosis. — Any laryngeal involvement regardless of age should have a complete physical examination, especially the chest, by some one who is an expert on chest diagnosis. Stereoscopic radiographs of the chest should always be taken, as they are a tremendous help in the diagnosis. A blood Wassermann, frequent sputum, and smear from the laryngeal ulcers should be examined for the presence of tubercular bacilli in all cases. As laryngeal tuberculosis is the most common, fatal involvement of the larynx, the diagnosis should be considered tuberculosis until otherwise proven.

Treatment.—No one method of treatment can be outlined to apply to all cases of laryngeal tuberculosis. The pulmonary treatment is as much or more important than the laryngeal treatment. The laryngologist who does not give thorough advice and conservative treatment to these most unfortunate patients with larygeal tuberculosis should not attempt to treat them. However, overtreatment cannot be condemned too greatly.

Bed rest and voice rest are the most important remedies for laryngeal tuberculosis. Suitable climate is important in both pulmonary and laryngeal tuberculosis, but it is more important how the patient is treated than where he is treated. Vocal rest is the one most valuable treatment for all stages of laryngeal tuberculosis, and is the most difficult to get. I have had only one patient not break the complete-silence treatment, not speaking for eight months, with a complete cure of laryngeal tuberculosis. If the patient does not coöperate and rest his voice sufficiently, I think the laryngologist is justifiable in not keeping the case under treatment.

Treatment of superficial tubercular ulcers of the larynx with applications of 2 to 4 per cent Lactic acid solution or Formulin solution may be applied very carefully to the ulcer only two or three times a week. Deeper ulcers may be treated with 10 to 20 per cent Trichloracetic acid solution applied very carefuly for one-half minute, only to the ulcer, followed by applications of Sodium Bicarbonate solution. Tuberculin, if used, should be administered by and left to the discretion of the physician treating the pulmonary tuberculosis.

I have seen Foster and Chapman use the Solar Laryngoscope with the laryngeal mirror and reflecting mirror made of an alloy of aluminum magnesia to reflect the sun rays on the laryngeal tubercular lesions. This is done by the patients themselves, and they become greatly interested in their laryngeal lesions, because they can see where they are giving the treatment, with the laryngeal mirror.

Tuberculoma, I think, is best treated by excision and followed by electric cauterization. Cauterization for deep ulcers is considered the one best treatment for subacute or chronic ulcers that have resisted all other treatment and when the pulmonary tuberculosis is improving.

Tracheotomy has been advocated as a curative measure in order to rest the voice. I do not think tracheotomy can be condemned too strongly, because you can get complete rest of the voice by absolute silence. However, tracheotomy is indicated in the last stages and in the third stage of labor when severe dyspnea occurs, and I think it is a very humane procedure.

Blocking of the internal branch of the superior laryngeal nerve for intrinsic and extrinsic advanced cases of laryngeal tuberculosis was first done by Hoffman in 1908. Various local anesthetics, such as from 2 to 10 per cent Cocain or Butyn Solution, Orthoform powder, Anesthetine powder, Chaulmoogra oil (Taraktogenus Kurzii King), P. D. & Co. or Lilly & Co., in full strength to 20 per cent diluted in Mineral oil, and narcotics, have been used for severe laryngeal tubercular pain without satisfactory relief.

Alcohol injection in the region of the internal branch of the superior laryngeal nerve, which anesthetizes the base of the tongue, epiglottis and larynx, is the most reliable remedy for relief of the severe agonizing pain in intrinsic and extrinsic laryngeal tuberculosis, which causes the patient to take a slow starvation diet with a marked loss of rest and sleep.

AUTHOR'S CASE REPORT NO. 1

Mr. A. F. P., white, male, age 55, small in stature, poorly nourished, anemic-looking, occupation truck driver, resident of Tennessee all his life, consulted me on May 9, 1931.

Family history: Negative.

Past history: Negative, except for chronic dry, hacking cough for a period of twenty-five years and recurrent attacks of influenza during the winter months.

Present history: Patient has noticed loss in weight and gradual loss of strength for the last three years. Hacking cough, slightly productive, over a period of twenty-five years. Patient noticed fast pulse and shortness of breath for two months. On account of severe laryngeal pain he has been able to take but very little nourishment or water for two months. For two weeks the pain in the throat has been much worse when he takes food or water. The only food that he has been able to take is old-fashioned boiled custard. However, this caused some pain, but he can take that better than anything else. He has never expectorated any bloody secretion. No history of pleurisy, night sweats or chills. He thinks he has never had any elevation of temperature.

I examined the patient and referred him to Dr. J. A. Price and Dr. Charles M. Oberschmidt. Dr. Oberschmidt saw the patient the first time on May 12, 1931.

My laryngoscopic examination showed he had a large superficial ulcer on both sides of the epiglottis and of the arytenoids. On May 21, 1931, I injected the region of the left internal branch of the superior laryngeal nerve with 3 cc of 75 per cent Ethyl Alcohol solution. I used a 3 cc Luer-Lok Control Syringe with a 25-gauge needle, 1¼-inch long.

Before describing the technic used, it may be well to mention the anatomical structures through which the needle must pass. First, the skin, superficial fascia, platysma muscle, and deep cervical fascia. Next comes a mass of loose areolar tissue, which to the operator's touch feels like a space. The floor of this space is formed by the thyrohyoid membrane, a structure which again offers some resistance to the needle. Over this membrane the internal laryngeal nerve courses before penetrating to distribute itself to the mucous membrane of the larynx. The point to be emphasized here is that to insure a successful blocking the needle should pierce the thyrohyoid membrane, but should not be pushed so deeply as to pass through the wall of the larynx where the alcohol solution would be expelled in the lumen of the larynx.

I scrubbed the neck with equal parts of ether and alcohol. With the patient sitting erect, the head slightly tilted backward, and after feeling the border of the upper posterior third of the thyroid cartilage with the finger nails to detect the region of the internal laryngeal nerve, I first punctured the skin in the region of the thyrohyoid membrane posterior to the thyroid notch (see figure No. 1(3), taken from Labat's "Regional Anesthesia," W. B. Saunders & Co.). The needle was slowly punctured through the skin upward and backward until the patient complained of pain in the ear, jaw, neck or arm on the left side. When this feeling occurs from the needle point, you can feel sure you are in the region of the internal branch of the superior laryngeal nerve, because it is a sensory branch. The solution was injected while the needle was slowly moved around (see figure No. 2(31), by Lukens, "The Nose, Throat and Ear and Their Diseases," Jackson & Coates, W. B. Saunders & Co.). The patient noticed slight smarting immediately after the injection of the alcohol. The needle was removed and the punctured wound was sealed with Flexible Collodian.

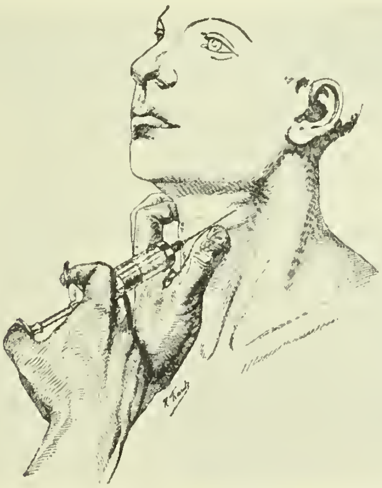


Figure No. 1: Superior laryngeal block. The needle is inserted at a point 1 cm. below and 2 cm. in front of the extremity of the great cornu of the hyoid bone.

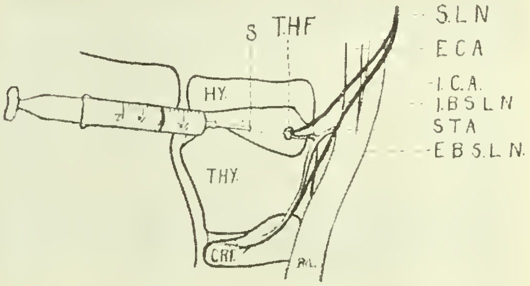


Figure No. 2: Schematic sketch of the relations of the internal branch of the superior laryngeal nerve: HY., hyoid bone; THY., thyroid cartilage; CRI., cricoid cartilage; S., superior laryngeal nerve; E.C.A., external carotid artery; I.C.A., internal carotid artery; I.B.S.L.N., internal branch superior laryngeal nerve; S.T.A., superior thyroid artery; E.B.S.L.N., external branch superior laryngeal nerve. The dotted outline between S and T.H.F. indicates the portion of the hypodermic needle beneath the skin, extending from the skin puncture to the thyrohyoid foramen.

Within a few minutes the patient noticed he had relief from soreness in his throat on the side of the injection and could swallow water with some less discomfort.

The patient returned in four days with a history that the pain had been very much relieved on the left side since the alcohol injection. He said he could take milk and water, but still had pain on the right side, which had not been injected. An injection was made on the right side, as described above.

After the second alcohol injection, the patient was able to take soft and semi-solid foods, such as mashed potatoes, milk toast, orange juice, soft vegetables, eggs, ground meats, and other foods and water, without pain and with very slight soreness.

The patient had very little appetite for any food after the last injection. Later on there was less desire for nourishment and food had to be forced. The patient continued to run temperature from 100 to 101 degrees. The patient grew weaker and more toxic, and died on July 18, 1931.

AUTHOR'S CASE REPORT NO. 2

Mrs. W. T. N., age 35, white, was referred to me by Dr. Lyle Motley, with a diagnosis of advanced laryngeal and pulmonary tuberculosis.

Family history: Negative.

Past history: Had usual diseases of childhood. Thirteen years ago the patient nursed her husband for one year, who died with pulmonary tuberculosis. The patient noticed no pulmonary or laryngeal symptoms until two years ago, following a severe attack of influenza. Following this illness, her physician informed her that she had an acute tubercular involvement of the lungs.

Present history: For the last two years the patient has had gradual loss in weight until now the loss of weight is about forty pounds. The patient thinks she is seven months' pregnant. Nine weeks ago the patient noticed slight soreness in both sides of the throat in swallowing, with or without food or water. This soreness has gradually increased until four weeks ago she began with severe pain, with or without swallowing food or water. For one week she has been forced to stop eating before she satisfies her appetite, due to severe pain in her throat. For two months she has noticed very slight hoarseness at times. She has had a slight productive cough for two years.

Examination showed large, deep, extensive ulceration of the right anterior and posterior pillars, and small, multiple, superficial ulcers of the right tonsil; several small superficial ulcers of the right side of the uvula. There was marked thickening and infiltration of the epiglottis; large superficial ulcer of the right side of the epiglottis and small superficial ulcer on the left side of the epiglottis. There was large, deep ulceration in the region of the right arytenoid fold. There seemed to be no pathological involvement of either of the vocal cords.

I injected the alcohol solution the same as described in case No. 1 into the region of the internal laryngeal nerve. Five minutes after the injection the patient was able to swallow water with a slightly full feeling in the right side of the throat, and stated she had no pain, with or without swallowing water, whereas before the injection she was having severe pain. Four hours later I saw her, and she stated she was able to finish a normal meal with only slight soreness on the right side, only while eating.

BIBLIOGRAPHY

1. Spencer, Frank R.: "Laryngeal Tuberculosis," J. P. Lippincott Co., 1927.
2. Lockard, Lorenzo B.: "Tuberculosis of the Nose and Throat," C. V. Mosby Co., 1913.
3. Labat, Gaston: "Regional Anesthesia," second edition, pp. 141, 142, revised, W. B. Saunders Co., 1928.
4. Thomson, Sir St. Clair: "Diseases of the Nose and Throat," third edition, D. Appleton & Co.
5. Wood, George B.: "Laryngeal Tuberculosis," Archives of Otolaryngology, February, 1930, Vol. XI, pp. 217-223.
6. LaRue, Claude L.: "Prognostic Value of Laryngeal Tuberculosis," The Southern Medical Journal, May, 1928, Vol. XXI, pp. 344-349.
7. Wood, George B.: "Tuberculosis of the Throat," Archives of Otolaryngology, December, 1926, Vol. IV, pp. 527-535.
8. Wood, George B.: "The Use of the Electric Cautery in Laryngeal Tuberculosis," American Journal of the Medical Sciences, June, 1922, No. 6, Vol. CLXIII, p. 854.
9. Woodbridge, Philip D.: "Therapeutic Nerve-Block with Procaine and Alcohol," The American Journal of Surgery, New Series, August, 1930, Vol. IX, No. 2. pp. 278-288.
10. Fetterolf, George: "The Use of the Galvano-

Cautery in the Treatment of Tuberculosis of the Larynx," The Laryngoscope, St. Louis, April, 1924.

11. Fetterolf, George: "The Larynx in One Hundred Cases Dying of Pulmonary Tuberculosis: A Clinical Postmortem Study," The Laryngoscope, St. Louis, January, 1916.
12. Fetterolf, George: "The Symptomatology of Tuberculosis of the Larynx," Medical Record, January 23, 1909.
13. Schlenker, Lawrence: "A New and Essential Point in the Blocking of the Internal Laryngeal Nerve," The Journal of the American Medical Association, December 14, 1929, Vol. XCIII, pp. 1886-1887.
14. Shurly, Burt R.: "Treatment of Tuberculosis of the Larynx," Transactions of the American Laryngological, Rhinological and Otological Sceiety, Inc., 1925.
15. Spencer, Frank R.: "Importance of Early Diagnosis and Treatment of Laryngeal Tuberculosis," The Journal of the American Medical Association, July 24, 1926, Vol. LXXXVII, pp. 216-219.
16. Forster, Alexius M., and Chapman, S. J.: "The Use of the Solar Laryngoscope in the Treatment of Tuberculosis," Transactions of the Twentieth Annual Meeting of the National Tuberculosis Association, 1924.
17. Looper, Edward A.: "The Diagnosis and Treatment of Laryngeal Tuberculosis," Annals of Otology, Rhinology and Laryngology, December, 1926.
18. Spencer, Frank R.: "The Medical and Surgical Treatment of Laryngeal Tuberculosis, Including a Preliminary Report on the Direct Injection of Tuberculin Into the Larynx," Annals of Otology, Rhinology and Laryngology, September, 1923.
19. Spencer, Frank R.: "The Clinical Diagnosis of Laryngeal Tuberculosis," Annals of Otology, Rhinology and Laryngology, September, 1923.
20. Spencer, Frank R.: "The Diagnosis, Differential Diagnosis and Prognosis of Laryngeal Tuberculosis," Annals of Otology, Rhinology and Laryngology, March, 1924.
21. LaRue, Claude L.: "Treatment of Tuberculous Laryngitis, Considering Especially the Use of Chaulmooga Oil," Annals of Otology, Rhinology and Laryngology, March, 1925.
22. Dworetzky, Julius P.: "Lung Immobilization in the Treatment of Pulmonary Tuberculosis and Its Influence on the Larynx: A Further Report," Transactions of the American Laryngological, Rhinological and Otological Society, Inc., 1930.
23. Schugt, H.: "Additional Experiences With the Curative Paralysis of the Recurrent Nerve (of Leichsenring) in Tuberculosis of the Larynx," p. 491, Eye, Ear, Nose and Throat Yearbook, 1930, The Yearbook Publishers.
24. Cure, Di: Analgesics preferable to resection of laryngeal nerve for dysphagia, Rassegna internaz. de clin. e terap. 8: 27, 1927.
25. Hoffman, R.: Daueranesthesie im tuberkulosen Kehlkopf Munch med. Wchnschr. 22: 739, 1928.
26. Hutter, F.: Ueber para-laryngeale Anaesthesierung und innere Leitung-sanesthesie bei endo-laryngealen Eingriffen, Ztschr. f. Hals-Nasen-Obrenbeilk., 5: 209, 1923.
27. Schlenker, L.: A new and essential point in the blocking of the internal laryngeal nerve, J. A. M. A. 93: 1886, 1929.
28. Schugt, H. P.: Tuberculosis of the larynx, Arch. Otol. 4: 479, 1926.
29. Schugt, H. P.: Superior laryngeal nerve block, Am. J. Surg. 7: 659, 1929.
30. Wood, George B.: Jackson & Coates, p. 869, W. B. Saunders & Co.
31. Lukens, Robert M.: Jackson & Coates, p. 892, W. B. Saunders & Co.
32. Chapman, S. J.: Transactions of State Oto-Laryngeal Society, Denver, 1922.

DISCUSSION

DR. STEWART LAWWILL: We have been listening to a very interesting paper, and we must congratulate ourselves on having a paper that so thoroughly covers the subject. In reading Doctor Anthony's paper, a copy of which was forwarded to me several weeks ago, I was struck first of all by the rather voluminous bibliography which Doctor Anthony quoted. It shows that he has been reading up on this subject for many weeks before attempting to write a paper. He lists more than thirty different articles from which the material for his paper was gathered. It would seem from this that the subject is most thoroughly covered from every angle. We are very much indebted to Doctor Anthony for such a fine paper. There are only a few points which I can add in the discussion, and the rest of the time I can only emphasize what Doctor Anthony has already stated.

Doctors Koerth and McCorkle, of San Antonio, reported some thirteen cases of laryngeal tuberculosis which were treated by alcohol injections from 1925 to 1928. Their conclusions were:

1. That alcohol injection of the internal laryngeal nerve does relieve pain in tuberculous laryngitis from a few days to weeks.

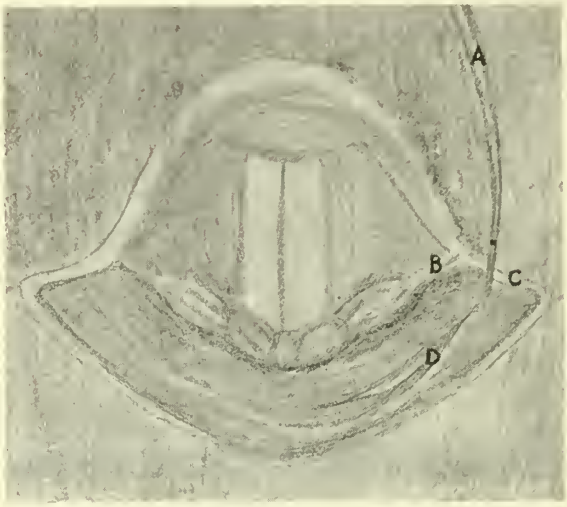
2. The indication for its use is the "painful spot," and its contra indications are diseases of the pharyngeal wall, soft palate, and tonsils.

3. The injection can be repeated as often as necessary.

4. This form of treatment is much safer and should be used more often in the treatment of painful laryngeal tuberculosis instead of the well-known drugs, such as cocaine, anaesthesin orthoform, Formalin-Lactic acid narcotics, etc.

5. The injection of the nerve on both sides can be done at one sitting without ill effects.

Method of Injecting Superior Laryngeal Nerve Via the Pyriform Sinus



A, probe points to site of injection; B, ary epiglottic fold; C, plica pharyngo-epiglottica; D, superior laryngeal nerve.

Although it is generally believed that tubercular laryngitis occurs in ten to fifty per cent of patients affected with pulmonary tuberculosis, it is the experience of most writers that it occurs in a much higher percentage, even seventy-five or eighty per cent. The reason that the reports for these figures remain low is because the diagnosis is not always made. These T. B. patients are usually bedfast, and, because of the inconvenience, complete laryngoscopic examination is not always made. Pain does not occur in those cases where the vocal cords or inter-arytenoid regions alone are affected; and here tuberculosis may be active and go unrecnized, for the only symptoms would be hoarseness and a feeling of dryness in the throat. The patients who have the most pain are those of the aryteno-epiglotic type and where there is an infiltration of the ventricular bands. Of course pain is also experienced if the tonsils, pillars, soft palate, etc., are involved; but the pain in this case would not be referred to the larynx, and alcohol treatment to the internal laryngeal nerve would be of no benefit.

The approach to the internal laryngeal nerve for alcohol injection, in most cases, is no more difficult than giving an ordinary hypodermic. However, occasionally the nerve is missed, and failure to relieve suffering results.

Cause of failure is in not getting the needle within the right plane of the nerve. Fetterolf has shown that 1 cc. of alcohol in this area will spread from one to two inches, but it will not penetrate a layer cf fascia nor a muscle. Therefore, any point within the thyro-hyoid space should suffice. It is easy, however, to penetrate the laryngeal aperture and have the patient cough up the alcohol. Should this be done, a second attempt can be made immediately. However, if the alcohol injection is made too shallow, a wait of three days should be allowed to permit swelling to recede before another injection is made.

Doctor Schugt, American Journal of Surgery, of 1929, reports a method of injecting the superior laryngeal nerve via the pyriform sinus. He gives credit for the method to Aurelius Rethi, of Germany, as far back as 1912. Personally, I have had no experience with this method. The method as outlined by him is very simple. The laryngeal nerve is quite superficial under the mucous membrane in the pyriform sinus where it divides the mucous membrane into two folds; and if the parts are not congested, the nerve shows through beneath very nicely. At this point the injection is made by means of indirect laryngoscopy and a long curved needle. I believe the external method would appeal to most physicians and should be frequently resorted to.

I think we all understand that this is a method used mostly for those fatal cases in which the last few weeks or months of the unfortunate consumptive's left are made more endurable by relieving him of the agonizing pain which so many laryngeal cases suffer toward the last.

"THE DOCTOR AS A WITNESS."*

B. S. Rhea, M.D., Lebanon.

In preparing this short address I have interviewed a professor of law, a circuit court judge, a criminal lawyer and an attorney specializing in civil cases —all men of attainment and prominent in their special fields.

On page 2084 of the Code of Tennessee you will find Article 1, Section 9806, Sub. Section 7:

When Deposition May Be Taken

May be taken (7) when he is an officer of the United States, an officer of this state, or of any county in the state, the clerk of any court of record other than that in which the suit is pending, a member of the general assembly while in session, or clerk or officer thereof, a practicing physician or attorney, a jailor or keeper of a public prison in any county other than that in which the suit is pending.

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*Chairman's address read before the Railway Surgical Section, Tennessee State Medical Association, Memphis, April 12, 1932.

SEC. 9810 EXEMPTION MAY BE CLAIMED WHEN

The witness, if he occupies any of the positions, or is employed in any of the capacities enumerated in subsection 7 of section 9806, is exempt from the penalties provided for the nonattendance of witness summoned by supoena is served, stating the ground thereof, in which case the officer will return the facts according to the claim.

In my interview with the professor of law I elected the following facts and statements: Physicians and surgeons are called almost exclusively as experts and are not barred to testify as such, if they have to make special preparation, unless the party calling them is willing to make compensation for their preparatory work. If a physician is summoned in a civil suit and does not want to attend and testify in open court, he can secure exemption by stating to the officer who summoned him that he is a practicing physician and as such claims exemption. If he does this, the party desiring his testimony can get it only by taking his deposition. He can be required to give deposition if it is demanded. If there is any special reason why the physician should testify in open court, and not by deposition, then the court can make an order requiring him to attend the trial and testify in person. This is the only exception to the rule that the physician is exempted from testifying in court at the trial of a civil suit when he has claimed his exemption.

If the physician fails to claim his exemption when the subpoena is served on him, he may go before the court and claim it, in which case the court will order his deposition to be taken in a civil suit unless there is some special reason why he should be required to testify in person. In all criminal cases the physician must appear and testify in open court like any other witness.

When physicians testify as experts they are usually selected and paid by the party who has them subpoenaed, and the general rule is that they are entitled to demand extra compensation in all unusual cases requiring special investigation with view to testifying. The question as to the amount of compensation in such a case is left by the court to be settled between the physician and the party employing him.

It is a good idea for the attorney and witness to go over the case before trial and have an understanding as to what questions should be asked and answers given.

A general practitioner should not pose as an expert in cases in which a specialist should be called. General practitioners are frequently experts in some phase of general practice and as such can testify as experts.

I think doctors as a rule make good witnesses because of their intelligence and being familiar with the subject they are testifying about. They are honest and fair.

A SUMMARY OF THE ABOVE

A physician summoned to appear in a criminal case must appear.

A physician summoned in a civil case may claim his exemption by stating at the time the subpoena is served that as a practicing physician he claims exemption.

A physician must give his deposition if asked to do so.

Although a physician claims his exemption, if for any special reason the court thinks the case demands it, he can be compelled to attend in person.

If he fails to claim his exemption at the time the subpoena is served, if he does not desire to appear in person, he may go before the court and ask that his deposition be taken.

Before appearing in court to testify a physician should have gone over the case with the attorney and with other physicians who are to testify, and with medical experts, if there are to be any in the case, in order that they may all be in accord, knowing beforehand the questions to be asked and the answers to be given.

Appearing in court to testify a physician's dress should be fitting his station. He should be dignified, should be courteous, should speak facing the jury, should be familiar with the case from the medical standpoint, should speak in simple language in order to be understood by the jury, avoiding all technical terms and if using them should explain in plain every-day words what he means. He should not try to impress the court and jury with his superior knowledge and wisdom. He should not indulge in repartee or sarcasm, nor become rattled or angry. He should not show any bias or prejudice, should be fair and honest to both sides. He should be calm and composed, speaking in a quiet tone, but should be positive and definite. He should take his time in answering questions and should not hesitate to have the attorney repeat the question and if he does not understand the question ask that it be explained. He should answer in as few words as possible and to all questions that can be answered by yes or no he should use them, not trying to modify or explain. He should not claim to be an expert on subjects in which he is not a specialist.

If a physician appearing in court will observe the above, he will be considered a good witness, will not be embarrassed, and will give no offense to either side.

In Tennessee the court has the right to limit the number of experts testifying on each side. In a comparatively recent case the number on a side was limited to five. Physicians who are summoned to testify in open court as experts are not subject to be put under the rule, while non-expert witnesses are testifying in the case, but may remain in the court and hear the testimony of non-experts in order to get an insight into the nature of the case, however, when the experts begin to testify then they become subject to the rule and required to retire. Very frequently, in fact nearly always, physicians who testify as experts are required to give an opinion upon a hypothetical question stating facts proven by other witnesses in the case. A hypothetical question must be based entirely upon facts that have been proved or admitted to be proved, and cannot be based upon inferences or opinion of other witnesses. When a physician has a personal knowledge of the facts of the case, as for example, where he must testify about the sanity of a person with whom he was personally acquainted or whom he has treated as a patient, he must state facts, such as conversations he has had with the party when sanity is an issue or what he has seen of his conduct and give his opinion based on such facts known to his own knowledge, or he may give an opinion based in part on what he knows of his own knowledge and in part upon facts proved by the testimony of other witnesses.

Physicians are allowed sometimes to perform experiments before the court and jury in order to demonstrate the correctness of their opinions. It is in the discretion of the court whether to permit experiments whenever the experiment would be inhuman, as where it is proposed to kill dogs in court to demonstrate how strychnine would affect them, the court refused to allow it. Also where it was proposed to bring a section from a human body into court in order to show rib and breast formation the court refused.

The professor's opinion was that doctors on the witness stand were as other witnesses, some good and some bad; the good ones answering questions simply and directly with as few words as possible, using only yes or not when able to do so. The bad medical witness, he stated, was one who wanted to tell more than he was asked.

In my interview with the judge he stated the doctor as a witness is a large subject. As to what kind of witnesses general practitioners usually make depends on whether or not the general practitioner has ordinary common sense. If he has and undertakes to state simply what he knows and to state it in a way to be understood by the court and the jury, who are laymen from the medical viewpoint, he makes a good witness. The mistake made more often, perhaps, than any other by general practitioners when they appear as witnesses is talking over the heads of the court and jury, by using technical and professional phraseology.

The purpose of testimony is to furnish information, and unless medical testimony is couched in language understandable to the court or jury hearing it, it fails of its purpose.

General practitioners sometimes undertake to speak as experts in regard to matters that fall in the fields of the specialist, which is also a mistake.

A good medical witness is a modest man of good sense and good training, who has the gift of expressing himself in plain language, avoiding as far as possible medical terms and professional nomenclature. He must remember that he is trying to impart to ordinary men what he knows as a medical man. To do that he must use the language of the ordinary man.

The poorest medical witness in my opinion is the man who takes the witness stand with an air of superior wisdom and who undertakes by his demeanor and his testimony to impress those who hear him with his profound learning, or at least appears to do so, while on the other hand, the best medical witness is he who is profoundly learned but who carries himself with modesty and simplicity, and who creates the impression that he is honestly trying to make himself understood. The doctor who can make the court and jury understand the matter in regard to which he is testifying as he understands it is a successful witness.

The prominent criminal lawyer I interviewed made the following statements: In the last several years I have examined rather a large number of doctors in the trial of cases in the circuit court. As a general rule doctors make splendid witnesses. This is true for the reason that most of them are honest and fair. They are educated, intelligent, and in most instances have no motive except to speak the truth.

Any intelligent witness who knows how to express himself, and is familiar with the subject with which he is dealing, and honest, always makes a good impression, regardless of his occupation or profession. In damage suits the amount of the jury's verdict is largely controlled by the medical testimony. My idea of a good medical witness is one who speaks in the terms of the laymen and uses as few technical terms as possible, whose manner and demeanor on the stand manifest a spirit of fairness, and who leaves the impression that his object in answering the questions and giving testimony is to convince the jury of a desire to speak the truth. What makes a poor medical witness is one who indulges in the use of technical expressions which neither the judge, the lawyer, nor the jury can understand, and who has in mind the thought of convincing the jury of his learning and ability, rather than the thought to convince the jury of the truth in the matters about which he testifies, and who also shows a bias, prejudice or leaning to one side or the other.

Some of the best witnesses I have ever seen on the stand were doctors. Dr. T of this city is generally regarded by all lawyers who have examined or cross-examined him as one of the best medical witnesses. He always knows whereof he speaks, never uses technical terms unless essential, speaks a language the jury can understand, and is eminently fair. Dr. E is another splendid witness.

In my interview with the civil suit specialist his ideas and advice was, medical witnesses should not show any prejudice but be fair and strictly honest. Show by your answers and statements made you are well informed. Be definite, be positive, be brief; do not say too much. It is a mistake for a medical witness to try to show his knowledge by using technical terms and medical phraseology. He should speak in plain, simple language in order that the jury who are laymen and know nothing of medicine can understand him. He should not indulge in repartee and if the attorney seems sarcastic his answers should be given in a mild, gentle manner. You will by so doing make a better impression on the court and jury. There is no doubt but that a mild, gentle but positive manner of speech, a calm and dignified demeanor, and a neat personal appearance go a long ways in adding weight to a medical witness' testimony.

DR. W. P. WOOD

President, Tennessee State Medical Association

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H. H. SHOULDERS, M.D., Editor and Secretary

MAY, 1932

EDITORIAL

Our New President

Dr. William P. Wood, Sr., was born in Maynardsville, Union County, Tennessee, November 18, 1868. His early education was obtained in the schools of Union and Campbell Counties. In his early life he was engaged in farming and later taught school for four years. After this his medical aspirations were too strong to resist, so he began the study of medicine in 1891 and 1892 under a preceptor, as was the custom in those good old days. He entered the University of Tennessee, Medical Department, at Nashville in 1892, and graduated from this institution in 1894.

On December 12, 1889, Dr. Wood married Sarah M. Gentry, and from this union seven children were born, five boys and two girls. Two of these boys are now practicing medicine, and three of them are practicing dentistry, all with credit to themselves and to the profession which they represent. This alone is a contribution to the public welfare that any father may be proud of.

Dr. Wood practiced his profession in Union County for twelve years. He then moved to Knox County and carried on his practice until 1912, at which time he came to Knoxville, where he now resides. Dr. Wood's first wife died December 2, 1919. On August 28, 1923, he married Miss Mayme E. Parrott.

Since coming to Knoxville Dr. Wood has been honored by the medical profession in various ways. He was elected president of the Knox County Medical Society in 1924. He was a member of the Judicial Council from 1925 to 1930. He was appointed a member of the state Liaison Committee in 1931. He is one of the founders of Ft. Sanders Hospital and is a member of its staff.

Dr. Wood is a man whose integrity has never been questioned. He possesses in a marked degree the courage of his convictions. He never hesitates to let you know exactly where he stands and expresses his opinion in no uncertain terms. He stands for all that is good and uplifting in his profession, and he is ever ready to work and fight for what he deems its best interest. A good father, a true and sincere friend, and an upright citizen. What more could be asked of any man? These traits have contributed to his success as a physician, and have won for him the love of all who know him.

E. R. Z.

The Recomendation of the Liaison Committee

The medical profession of Tennessee has taken a long forward step in the interest of public health and the profession of medicine.

Last year, by amendment to the by-laws, there was created a committee known as the Liaison Committee, whose duty it is to give serious thought to the policies and activities of various health agencies in the state as they affect the public and the medical profession.

After considering all phases of the question, this committee made definite recommendations to the House of Delegates this year which were adopted. The recommendations were in brief as follows:

1. The passage of an amendment to the so-called reorganization bill which provides that a public health council of seven members shall be formed.

The Governor will appoint the members of this council from a list of nominations by the House of Delegates of the state medical association and one member nominated by the state dental association.

That this public health council will elect the executive officer, or commissioner of health, and formulate the policies of the department.

The next recommendation is the members of the Tennessee State Medical Association must carry the responsibility of doing the actual work of immunizing people against contagious or infectious disease where such procedures are of proven value. To this end an educational committee is to be formed for the purpose of supplying each and every doctor with accurate information as to the actual technique in the use of various agencies.

It is believed that, by these steps, the public will enjoy a greater protection against communicable disease, and that the greatest possible harmony between the health agencies of the state and the medical profession will be promoted.

We have said on this editorial page a number of times, and we believe it will bear repeating, that the greatest possible safeguard the public has against disease is a well informed, well organized and alert medical profession. The responsibility for such organization rests with the medical profession.

The departments of health will have plenty to do in dealing with those problems which require the use of executive force by constituent state authority.

CHARITY WORK

To prevent supplying charity work to those able to pay, the Shelby County Medical Society has appointed a committee. The report of this committee is published inasmuch as the problem concerns the whole medical profession and it is well to know the efforts being made to correct this very prevalent evil.

House of Delegates of Memphis and Shelby County Medical Society:

Your President requested the Legislative and Public Policy Committee, to make an investigation of the various hospitals and report their method of admitting charity patients.

The Committee called on each of the hospitals of the city and discussed this matter, at some length with the Superintendents and others interested. We find that the general rule is to accept the patient's statement very largely for this information. One of the hospitals has a reporting service that they use, but not always on charity patients. A patient presents himself for admission to the charity ward and states that he is unable to pay; as a rule they are accepted, provided there is room in the ward. If the patient admits he is able to pay the hospital and doctor, they are put in either a pay ward or private room.

All the hospitals apparently are in a frame of mind to reduce the number of people that are treated at these institutions as free patients. The question of determining the ones that are able from the ones that are not, is the big question. We find that not infrequently the patients are recommended by some doctor, the hospital sometimes calling the doctor and sometimes just accepting the patient's word that the doctor sent them in to the hospital.

We believe that if we are to improve on the conditions above referred to, each and every member will have to render his assistance and co-operation in this matter, and be careful he does not recommend pay patients for Charity Wards.

We suggest a questionnaire that can be agreed upon by the hospitals and this Society, as to the patient's ability to pay or the member of family that is responsible for their care. Such questionnaire to inquire as to whether or not the patient owns real estate; if not, does he rent and how much rent does he pay. As to the number of dependents in family, as to occupation and salary received, as to whether he owns or operates one or more automobiles, and for what purpose, as to the make of radio that is maintained, and any other expensive luxury that might be owned, the name of references that might verify statements given at this time.

We realize that this will probably be a little more difficult to obtain in all cases than one might think. Except in emergencies there is no reason why records of this kind cannot be kept. Then, if it is thought necessary, an investigation could be made the next day. If found that this statement given was not correct the patient could be placed in the proper place in hospital. We realize that it is going to be next to impossible to eliminate all cases where the hospital and doctors are imposed upon. But strict investigation and co-operation with the doctor will be time and money well spent if the plans can be carried out, as we know that there are too many people calling on organizations of this kind.

This report is submitted after an investigation at your request.

H. B. EVERETT,
W. L. WILLIAMS,
Committee.

DEATHS

Ashley Ogle, Pigeon Ford; University of the South, Sewanee, 1903; aged 49, died March 31.

Searle B. Gillespie, Johnson City; University of Tennessee, College of Medicine, Memphis, 1905; aged 51, died April 7.

M. H. P. Panhorst, Jonesboro; aged 84, died April 23.

P. H. Mangrem, Columbia; University of Tennessee, College of Medicine, 1894; died in April.

RESOLUTIONS

Dr. Ashley W. Ogle died of pneumonia March 31, 1932, at the age of 52. Dr Ogle was born December 17, 1880, in Sevier County, Tennessee, and received his preliminary education in the public schools and Murphy College. He was teacher in public schools for four years and then entered Tennessee Medical College and graduated from the Medical Department of the University of the South January, 1903. He was elected to chair of anatomy in Gate City Medical College, Texarkana, Texas. Later he specialized in eye, ear, nose and throat, also post-graduate in Chicago, afterward located in Knoxville, Tenn., where he practiced his profession for several years and later returned to his native home, Sevierville, Tenn., where he continued his practice until his death. Dr. Ogle was president of Sevier County Medical Society at the time of his death and was esteemed by his acquaintances, particularly by fellow physicians.

C. P. Wilson, M.D.
Sevierville, Tenn.

When, on the night of March 6, 1932, Dr. James Charles Wilson was called by death from his labors in the profession which he loved, and for which he was peculiarly fitted, a wise physician put away his stethoscope, and a skilled surgeon laid down his scalpel for the last time, leaving a gap in our ranks which will be hard to fill.

Dr. Wilson, in his life work, proved an exception to that Biblican saying, "A prophet is not without honor save in his own country." A descendant of one of Roane County's oldest and most prominent families, born and reared in this county, spending all of the 39 years of his professional life in Rockwood, his fame and reputation as a physician and surgeon extended beyond the boundries of his home county, and was state wide, drawing his clientele from far and near, but he was loved and honored most of all by those with whom he lived and labored.

His acquaintanceship was wide and general; having a hearty, genial personality, he was popular with all with whom he came in contact. His friends were numbered among all classes, and his sympathetic understanding of and close attention to the sick under his care, endeared him to the members of every home he entered.

Dr. Wilson was a faithful, active member of the Roane County Medical Society since 1905, always interested in its welfare and ever ready to contribute to its success. Ever loyal to the best traditions of his profession, he was an exponent of its noblest ideals.

To him, more than any one else, is due the credit for the establishment of Chamberlain Memorial Hospital in Rockwood and for its successful management since. During the last years of his life he worked earnestly, but unsuccessfully, to have the state build tuberculosis hospitals in this and other parts of the state.

Therefore, be it resolved, by the Roane County Medical Society, in regular meeting assembled, this April 19, 1932:

First, that we deeply deplore the passing of Dr. Wilson and express our sense of professional and personal loss in his death.

Second, that we extend our sincere sympathy to the family of our departed friend in their great loss, and that we commend them to the all-wise and divine Comforter of us all, in their sorrow and bereavement.

Third, that we furnish a copy of these resolutions to the family of Dr. Wilson, a copy be sent to the Journal of the Tennessee State Medical Association, and a copy be filed with the minutes of the Roan County Medical Society.

Committee,
Roane County
Medical Society.

NEWS NOTES AND COMMENTS

Dr. Edward H. Cary, of Dallas, Texas, president-elect of the American Medical Association, addressed the Knoxville Rotary Club on April 5.

Dr. Robert Pillow, of Columbia, recently celebrated his 80th birthday. Dr. Pillow received congratulation from hundreds of friends. He has been in practice about 55 years.

Dr. Fowler Hollabaugh, of Nashville, announces the opening of an office in the Doctors' Building for the practice of ophthalmology.

Dr. James D. Miller, of Johnson City, was a patient at the Appalachian Hospital last month.

On April 5, Dr. H. E. Christenberry, of Knoxville, spoke over WNOX on the "Value of the Audiometer in Preventing Deafness Among Children." The program was sponsored by the Woman's Auxiliary of the Knox County Medical Society.

Dr. W. L. Henderson, who practiced in East McKeesport, Penn., for 29 years, left an estate of $800.00 in cash and $25,000.00 in unpaid bills, his will filed for probate showed. He had gained a reputation as "the doctor who never sent a bill." His widow said she will take no legal recourse to the bills due.—United Press.

MEDICAL SOCIETIES

The ninety-ninth annual meeting of the Tennessee State Medical Association was held in Memphis on April 12, 13 and 14. Three hundred seventy-two doctors were registered. Ten visitors, representing six states, attended the sessions. Forty-two county societies were represented. Shelby County, the host society, was well represented and nothing was lacking which they could do to make the meeting a success. In point of attendance, Davidson County was second with an attendance of forty-five. Sullivan-Johnson Counties sent two representatives. The program was one of the best that has been presented in a number of years. The papers were well prepared and great interest was shown in the discussions.

The Tennessee State Pediatric Association held its meeting the day before the annual session and the two sections, the Eye, Ear, Nose and Throat Section, and the Railway Surgical Section, also report profitable meetings.

Bedford-Coffee Counties — Bedford and Coffee County Medical Societies met at the Manchester Hotel April 21. Twenty-five doctors enjoyed the banquet and program.

Dr. A. E. Ray, of Tullahoma, read a paper on nervous diseases and Dr. Vernon Earthman discussed "Acute Tonsilitis." Dr. W. H. Avery, president of the Bedford County Medical Society, presided.

Both of these counties have good live societies and a joint meeting of the two counties just could not be beaten anywhere in the state.

Chattanooga and Hamilton County Medical Society—April 21. "The Treatment of Hodgkin's Disease," by Dr. Charles H. Heacock, Memphis.

April 28—"Rheumatic Fever," Dr. W. E. Bryan. "Auricular Fibrillation," by Dr. P. R. Hysinger.

May 5—"Infection of the Upper Extremity," by Dr. J. A. Reynolds.

May 12—Moving picture of the "Skillern Radical Frontal Sinus Operation," by Dr. Samuel R. Skillern, Jr., Philadelphia, Pa.

May 19—The Blood Count in Surgical Conditions," by Dr. B. S. Wert. "The Unusual Pitfalls Complicating Appendicitis," by Dr. H. Q. Fletcher.

May 26—"Nervous Indigestion," by Dr. J. L. Bibb. "Diarrhoea," by Dr. W. J. Hillas.

June 2—"The Diagnosis and Treatment of the Condition Called Brain Trauma," by Dr. E. Dunbar Newell.

June 9—"Obstetrics Up to the Renaissance," by Dr. Edward F. Buckner.

Chester, Henderson and Decatur Counties—On April 14, Henderson was the host of this society. Dr. Wallace of Bolivar, Drs. John E. Powers of Jackson, G. A. Brandon and J. F. Goff of Lexington, were the essayists.

Luncheon was served. The attendance was large and all present enjoyed the excellent program.

Cumberland, Jackson, Overton, Putnam and White—The April meeting at the Commercial Hotel in Gainesboro was a success in all respects. The attendance was good, and the counties were well represented.

Davidson County—On April 19, Dr. B. A. Cockrill, of the Veterans' Bureau, gave a "History of Veterans' Legislation and Benefits."

On April 26, Dr. Eugene Orr read a paper on "Sinusitis." Very liberal discussion was given the paper.

May 3—Report of the committee appointed to investigate public health relations in Nashville and Davidson County.

Gibson County—The Gibson County Medical Society has arranged the following programs for the year. The society has scheduled some of the outstanding men of America and we are sure many West Tennessee physicians outside of Gibson County will visit Trenton for these programs:

May 14—"General Medicine," by Dr. O. N. Bryan, Nashville. "Diseases of the Rectum," Dr. D. R. Pickens, Nashville. "Management of Complications in Labor," Dr. J. C. Litzenberg, professor of obstetrics, University of Minnesota.

May 30—"Diagnosis in General Practice," Dr. Drew Luten, Washington University, St. Louis. "Nose and Throat Infections of Children," Dr. Theo. C. Hempelmann, Washington University, St. Louis.

June 27—"Syphilis in General Practice," Dr. Paul O'Leary, Mayo Clinic, Minneapolis. "Pediatrics," Dr. W. M. Marriott, St. Louis.

July 25 — "Obstetrics—Prenatal Care," Dr. Rudolph Holmes, Northwestern University, Chicago. "Toxemias of Pregnancy," by Dr. Fred Freed, Bellevue Hospital, New York.

August 29 — "Carcinoma, Early Diagnosis," Dr. W. A. Bryan, Nashville. "Diseases of Thyroid," by Dr. W. D. Haggard, Nashville.

September 26—"Malaria, Paresis," Dr. Wm. Krauss, Bolivar. "Surgery," Dr. J. A. Crisler, Memphis. "Early Diagnosis of Pulmonary Tuberculosis," Dr. A. F. Cooper, Memphis.

October 31—"Pellagra," Dr. Louis Leroy, Memphis. "Neurology," Dr. R. E. Semmes, Jr., Memphis. "Chronic Arthritis," Dr. J. B. McElroy, Memphis.

November 28 — "Nephritis in Pregnancy," Dr. Martin Fischer, Cincinnati. "Malaria," Dr. R. A. Hennessey, Memphis.

December 26—"Injuries of the Extremities," Dr. Battle Malone, Memphis. "Posterior Urethritis," Dr. Russell Hennessey, Memphis.

Greene County—A joint meeting of the Greene County Medical Society and the Greene County Dentists' Society was held at the Greeneville Golf and Country Club.

After dinner was served an interesting program was given.

Hardin, Lawrence, Lewis, Perry and Wayne Counties—The following program was delivered at Savannah on April 26. Twenty-three doctors were present. A luncheon was served by Dr. and Mrs. O. C. Doty at their home. A musical program was rendered.

"Modern Methods of the Treatment of Angina Pectoris," by Dr. F. H. Norman, Waynesboro. Discussion opened by Dr. Lyle Motley, Memphis.

"Uterine Hemorrhage," by Dr. W. T. Black, Memphis. Discussion opened by Dr. J. H. Tilley, Lawrenceburg.

"Pernocton for the Relief of Pain in Obstetrics," by Dr. J. P. Long, Memphis. Discussion opened by Dr. J. W. Danley, Lawrenceburg. "Instrumental Correction of Prostatic Obstruction" (motion pictures), by Dr. Thomas D. Moore, Memphis. Discussion opened by Dr. H. K. Turley, Memphis.

The next meeting will be held in Lawrenceburg on May 31.

Knox County—Dr. G. A. Williamson was the essayist on April 19. Dr. C. L. Chumley read a paper on April 26.

Madison County—On April 6, Dr. John Powers read a paper on "Cerebro-spinal Fever." Drs. Swann Burrus, J. R. Thompson and R. K. Hollingsworth led the discussion.

Drs. W. T. Fitts and R. B. White made a case report.

Plans were made for the entertainment of the West Tennessee Medical and Surgical Association which will hold its meeting in Jackson May 26 and 27.

Dr. G. A. Brandon, of Lexington, invited the Madison County society to attend the meeting of the Tri-County Medical Society on April 14, at Henderson.

Maury County—The April meeting was held on the 4th, at the Elks Club, with a good attendance.

Dr. W. K. Sheddan read a thoroughly scientific paper entitled "The Sequence of Senescence," which invoked an interesting discussion.

Obion County—On April 27, Dr. E. A. Boswell, of Troy, read a paper on "Arterio-Sclerosis."

Roane County—The April meeting was reported to be the best and most largely attended for two years.

Dr. J. C. Ely read a paper on "Antitoxic Immunity." Dr. R. F. Regester's subject was "The Prostates." Both papers were discussed by all present.

Resolutions of respect for Dr. J. C. Wilson, deceased, were passed.

Sullivan and Johnson Counties—On April 6, the meeting was held at Hotel Virginia, Bristol. Dr. W. R. Rogers spoke on "Paralysis Ileus." The paper was given liberal discussion by several of those present.

OTHER MEDICAL SOCIETIES

The Middle Tennessee Association met in Sparta on May 5 and 6. The papers presented were, if anything, better than usual. A large attendance was present and the hospitality of the White County doctors cannot be beaten.

Columbia was selected as the next meeting place. The following officers were elected: Drs. W. A. Bryan, Nashville, president; L. D. Allen, Smithville, vice-president, and Theo. Morford, Nashville, secretary-treasurer.

The West Tennessee Medical Association will meet in Jackson on May 26 and 27.

The Madison County Medical Society is making elaborate preparation for the entertainment of the society. The program committee has been working hard and we are sure that all who attend will be amply repaid.

Vanderbilt University Medical Society—April 1.

1. Case Reports:

(a) A Case of Generalized Neurofibromatosis—Dr. W. D. Strayhorn.

O. W., white, male, age 23. Yearly attacks, three or four weeks in duration, of redness, swelling and tenderness of right foot, associated with fever. Thirteen years ago noticed nodule in axilla and intercostal space. Two years ago developed sensory disturbance lower extremities. Complained of stiffness and swelling of legs on admission to hospital. Examination revealed edema of legs, large nodules in nerve trunks, and sensory level at fourth dorsal segment, with adductor spasm of legs. Lumbar puncture and lipiodol injection verified impression of spinal block. Biopsy of nodule showed on section myxomatous type of neurofibromatosis.

Case discussed by Drs. Brooks, Morgan, Burwell and Youmans.

(b) A Case of Staphylococcus Liver Abscess and Septicemia in a Child—Dr. J. M. Mayer.

V. H., white, female, age 5. Onset of malaise and fever, followed in one week by pain right abdomen, chills, fever and sweats. X-ray evidence of liver abscess. No primary focus found. Blood culture positive for staphylococcus aureus. Two-stage drainage of liver abscess. Blood culture sterile ten days after operation. Eight weeks after operation, developed suppurative arthritis right ankle, with nine metastatic subcutaneous abscesses. Abscesses incised and drained. Patient discharged with only slight stiffness right ankle.

Case discussed by Dr. Beverly Douglas.

2. Amoebiasis in Tennessee—Drs. H. E. Meleney and W. W. Frye.

A state-wide survey of the intestinal protozoa of man in Tennessee showed that the actual incidence of *endamoeba histolytica* in 20,000 individuals from the rural farm population is about 22 per cent. The highest incidence was found in counties on the eastern Highland Rim, Jackson County leading with an incidence of 52 per cent. One community in this county had an incidence of about 50 per cent, but the occurrence of acute amoebic dysentery was very rare. Flies caught in houses had cysts of *E. histolytica* in their dropping. No animals were found to act as reservoir hosts. In Madison County an epidemic of acute amoebic dysentery was studied, consisting of twenty-five typical cases. The amoebae from Madison County produced dysentery in kittens three times as often as the amoebae from Jackson County.

Paper discussed by Dr. D. F. Milam.

3. Cyclic Variations of the Cell Types of the Anterior Pituitary of the Dog With Reference to the Oestral Cycle—Rucker Cleveland, Dr. J. M. Wolfe and Mary Campbell.

A definite cyclic variation of the cell types present in the anterior lobe of the female dog (with reference to the oestral cycle) has been found. A special stain has been used. About 10,000 cells were counted in each hypophysis. These have been divided into four types. Type III reaches its peak during the period of pro-oestrus and oestrus. At the end of the lutein phase, Type IV outnumbers the granular cells. Type II, a granular cell found, has not heretofore been described in the literature.

Paper discussed by Dr. John Burch.

NEWS OF WOMAN'S AUXILIARY

The Tennessee Woman's Auxiliary to the American Medical Association held its fifth annual meeting April 12, 13 and 14 at the Peabody Hotel in Memphis.

Mrs. W. H. Gragg, president, presided over the meetings which were fully attended and exceedingly interesting.

Program was as follows: Pre-convention board meeting the afternoon of April 12. The most important thing at this meeting was the presentation of a new constitution by the Revisions Committee, Mrs. Ed. Clay Mitchell, chairman. This constitution was accepted and offered to the open meeting the following morning. The president, Mrs. W. H. Gragg, entertained the members of the state board and all committees for the meeting with a buffet supper at her home at 7 o'clock. Following this, a reception was held in Mrs. Gragg's home by the state of-

MRS. OLIVER HILL

ficers from that section, in honor of Mrs. Chas. E. Oates, president of the Woman's Auxiliary to the Southern Medical Association, national representative at the meeting. Mrs. Gragg's daughter sang a group of songs that were most enthusiastically received. During the evening a group of negroes from the Gragg Plantation sang old Southern melodies and negro spirituals. On the morning of the 13th, the annual business meeting was held with many lovely reports from the four organized counties. Mrs. W. T. Black, president of the Memphis and Shelby County Auxiliary and official hostess, extended to all visitors a most hearty welcome. Response by Mrs. W. W. Potter, of Knoxville, was given is a most gracious manner. Dr. Percy W. Toombs, of Memphis, addressed the meeting and brought to us the spirit of co-operation and sympathetic interest in the auxiliary. Mrs. W. O. Floyd, of Nashville, chairman for "Romance of Doctors," a project of the Southern Medical Auxiliary, gave a very thorough report, and Mrs. W. H. Gragg reported a beautifully written book by Mrs. Floyd and her committee.

The following new state officers were elected:

President________________Mrs. Oliver Hill
Knoxville, Tenn.
President-Elect__________Mrs. W. O. Floyd
Nashville, Tenn.
First Vice-President__Mrs. Willis Campbell
Memphis, Tenn.
Second Vice-President_Mrs. Theo. Morford
Nashville, Tenn.
Third Vice-President__Mrs. W. A. Shelton
Knoxville, Tenn.
Fourth Vice-President__Mrs. D. W. James
Memphis, Tenn.
Recording Secretary__Mrs. W. S. Laurence
Memphis, Tenn.
Corresponding Sec'y__Mrs. Joe L. Raulston
Knoxville, Tenn.
Treasurer _______________Mrs. B. F. Byrd
Nashville, Tenn.
Historian__________Mrs. W. W. Wilkerson
Nashville, Tenn.
Parliamentarian_________Mrs. W. T. Braun
Memphis, Tenn.

The new constitution was accepted and adopted. Mrs. W. H. Gragg, in retiring from the chair, submitted a fine report and expressed her appreciation for the co-operation and loyalty shown her during her term of office, and thanked especially the committee on arrangements, namely: Mrs. W. T. Black, Mrs. Willis Campbell, Mrs. Percy Toombs, Mrs. W. T. Braun, for a most beautiful and successful meeting, and wished for the new officers a happy and successful year.

The visitors were allowed the rare privilege of sharing honors with the retiring president of Shelby County, Mrs. Willis Campbell, and the new president, Mrs. W. T. Black, at the annual president's day luncheon. This was a beautiful event. An afternoon session was held in order that we might have the reading of the minutes of the state meeting.

At 7 o'clock, the visitors assembled at the home of Mrs. Willis Campbell for a lovely buffet supper and musicale. A wonderful musical program was given by the most outstanding talent in Memphis. Other entertainments included a drive to the principal places of interest in the city, with a stop at the country home of Mrs. J. P. Norfleet where the visitors were guests of the Memphis Garden Club, and a tea by the Nineteenth Century Club concluded the social affairs.

ABSTRACTS OF CURRENT LITERATURE

ANESTHESIA

By Hugh Barr, M.D.
Medical Arts Bldg., Nashville

Some Observations On Spinal Anesthesia. Chas. H. Richardson, Jr., M.D., Macon. The Journal of the Medical Association of Georgia, March, 1932.

The object of spinal anesthesia is to block off the sensory roots, but unfortunely the roots of the motor nerves are also affected. The motor roots control the vasocontrictor fibers. Interference with these fibers results in dilatation of all the splanchnic vessels and the withdrawal of large volumes of blood from the peripheral circulation. Thus we have the phenomenon of an individual bleeding into his own veins, causing anemia of the vital centers, which is expressed in lower blood pressure readings.

This lowered blood pressure, according to many authorities, may be overcome by the Trendelenburg position, allowing the blood to flow by gravity to the brain. The author has studied the effects of the intraveinous injection of 500 c.c. of 10 per cent solution of glucose in normal saline. In a series of twelve cases, when the blood pressure was lowest, the injection of this solution produced an immediate rise in blood pressure in eleven of these cases, and a safe level was maintained.

In five cases the intraveinous infusion was given fifteen minutes before induction of anesthesia. A fall in from 10 to 20 systolic could not be averted, but a safe arterial was maintained in each case. The diastolic, which is most important, was subjected to little change.

DERMATOLOGY

By E. E. Brown, M.D.
Doctors Building, Nashville

Treatment of Urticaria With Insulin, By Paul Shevallier, Paris Medical Journal, January 16, 1932.

He does not attempt to explain the mode of action, but states that he has had exceedingly favorable results. He reports two cases. One a woman of 32 years who had previously had an abdominal operation that developed an obstinate urticaria which resisted every form of treatment. The slightest ingestion of food of any kind brought on an attack, but fats seemed to provoke the most intense attacks. There was a slight increase in the amount of fat in the blood. Diet and all medication was in vain until insulin was tried. Morning and evening five units of insulin were injected subcutaneously for ten days. With each injection several lumps of sugar was eaten to offset any hypoglycemia. Improvement was noted in a few days and a little later the patient was able to eat anything she wanted including fats. Her urticaria completely disappeared. She later had another attack after taking an excessive amount of fats and this was cleared by insulin. The other case was a girl who had suffered from urticaria since infancy. It was intense, but showed a tendency to diminish after exercise. The author surmised that the exacerbation occurred after alcoholic indulgence. After eight days of insulin treatment the patient was entirely cured and later she was able to drink cocktails with impunity.

OPHTHALMOLOGY

By Robert J. Warner, M.D.
Doctors Building, Nashville

The Results of Obliterating Cautery-Puncture in Detached Retina. J. Gonin. Archives of Ophthalmology, April, 1932.

The author says: "The present series of 300 observations has confirmed entirely what I have said for many years, that is, that a tear of the retina is the determining cause of the detachment called 'spontaneous,' and that obliteration of this opening suffices in recent cases to procure a complete and durable cure." Obliteration may be obtained by reapplication of the tear of the raised retina, either indirectly by the formation of adhesions between the ends of the retinal opening and choroid, or by a cicatrix which obstructs the progress of the detachment in the presence of a large tear especially of a peripheral detachment of the retina.

In more than 50 of the total number of cases (65 of a total of 300 in my series), one thermopuncture directly on the tear suffices to cause obliteration and permits cure in about fifteen days. In patients operated on in the first three weeks, the proportion of successes is found to be doubled. In 53 of the 300 cases, we were obliged to repeat the thermopuncture because the first application was incomplete or was followed by a relapse. In detachments of less than one year, cures may be obtained in the neighborhood of 40 per cent, while cases dating over three months show in my experience about 48 per cent, and this can be brought to 55 per cent if the operative intervention is made at least three weeks after the appearance of the detachment.

All relapses indicate an insufficient obliteration of the initial tear, or the presence of another not reached by the cautery. A relapse due to the production of a new tear independent of that which caused the first detachment may be met with after a few months or years, and even though it is a troublesome complication, the possibility of renewing treatment with subsequent cure is not excluded.

Of all procedures proposed up to the present, the application of the thermocautery directly to the retinal tear is the one that gives the most certain results. Operators who do not give sufficient attention to retinal tears expose themselves to the risk of numerous failures.

ORTHOPEDIC SURGERY

By Robert F. Patterson, M.D.
Medical Arts Building, Knoxville

Trochanteric Transplantation in the Treatment of Fractures of the Neck of the Femur.

This method of operation is designed to be used in the case of fractures of the neck of the femur, in which the closed treatment is inapplicable, or where union is delayed or faulty.

Operative Technique

With patient lying on the sound side, on a fracture table, and with the injured leg under the control of an assistant, a six inch, straight, external Langenbeck incision is made, extending from the illiac crest downward over the trochanter laterally along the shaft of the femur to a point three inches below the trochanter. After separation of the fibers of the gluteus medius muscle, the joint capsule is incised longitudinally. The tip of the trochanter is freed from the gluteous medius attachment and the soft structures are widely retracted after splitting the vastus lateralis muscle. With a motor saw a bone graft, three inches in length, one half inch in width, and three fourths inch in thickness is cut through the center of the trochanter and upper section of the femur. When this is removed, the neck of the bone is easily seen through the slot. The fracture is now reduced by leverage and a drill hole is passed, as in the Albee method, through the trochanter and neck, into the head of the femur. The length of the drill hole having been previously estimated from a roentgenogram of the opposite normal hip. After removing the periosteum, and shaping the graft, it is driven with its trochanter end outward into the prepared hole and the wound is closed in the usual manner. There is little bleeding, and it is unnecessary to tie any deep vessels.

The advantage of the use of this graft, is that it requires only one incision; and instead of using the hard non-porus tibial graft, you have a sponge graft, rich in matopoietic tissue, and is very favorable to early vascularization.

The graft is not doweled, but used just as it is with slight biting off of the projections. As to the selection of the case, the author advised this operation to any patient showing an early necrotic change in the head of the femur, or indicating delayed union, and in any patient in whom plaster fixation fails to maintain reduction—as in the extremely obese type of patient.

The author favors Whitman's abduction method above all others, in the conservative treatment of fractures, but also believes that there are many cases in which the method is doomed to failure owing to lack of ability to accurately approximate the fragments of the fracture.

Conclusions are as follows:

(1) Early and accurate replacement of displaced fragments with assurance that no interposition of tissue exists.

(2) Bridging of the fracture line with an autogenous bone graft, providing firm internal fixation, the graft also acting as a calcium source for the healing granulation tissue.

(3) Early reestablishment of blood supply between the head and neck of the femur in an area where blood supply is minimal.

PEDIATRICS

By John M. Lee, M.D.
Doctors Building, Nashville

Antitoxic Immunity Resulting from Administration of Toxin by Mouth. George F. Dick, M.D., and Gladys Henry Dick, M.D. Journal A. M. A., April 23, 1932.

The authors report the following experiment: "Persons were selected who gave no history of scarlet fever and who were susceptible to the disease as shown by positive skin reactions following intradermal injection of one skin test dose of scarlet fever toxin. Sterile scarlet fever toxin from which the streptococci had been removed by filtration was administered by mouth in doses increasing from 4 c‘c. to 16 c.c. of a toxin containing 50,000 skin test doses per cu. c.c. Thus the amount of toxin administered in a single dose was increased from 200,000 to 800,000 skin test doses. The toxin was given once a day on successive days. It was taken without dilution and unaccompanied by water or other fluid at least two hours after the preceding meal and not less than one and a half hours before the next meal."

To avoid possibility of accidental infection resulting in immunization, cultures were taken from nose and throat during period of observation, and all cases showing scarlet fever streptococci were excluded. Except for one patient that vomited after two doses, no reaction followed administration of toxin by mouth.

Of the patients so treated, 73.1 per cent were immunized after taking an average total dosage of 8,315,789 skin test doses of scarlet fever toxin. Using the same toxin injected subcutaneously, 93 per cent of another group were rendered immune after receiving an average total of 135,500 skin test doses.

ROENTGENOLOGY

By C. M. Hamilton, M.D., and H. M. King, M.D.
Doctors Building, Nashville

Postoperative Roentgen Therapy for Cancer of the Breast. U. V. Portmann, M.D., Cleveland Clinic, Cleveland, Ohio. April, 1932, American Journal of Roentgenology and Radium Therapy.

Breast carcinoma has always been considered as a surgical problem. Analysis of results for recent years shows this proceedure alone to be unsatisfactory.

Excision by any technique will destroy every neoplasm, if it is localized and confined to the field of excision. This condition is seldom found. Most cancers of the breast have extended throughout the gland and invaded other tissue when examined. Massive cross sections by Cheatle showed nests of cells throughout the breast in most instances. Pathologic reports show that the axillary nodes are involved in about 95 per cent of cases. It is doubtful if cancer can be completely removed from the axilla by surgical means. The axillary lymphatics drain directly into the supraclavicular regions which is seldom attacked surgically. The inaccessible parasternal glands are often diseased.

These facts indicate that cancer of the breast is a more extensive process than is usually considered. The most radical operation by any technique can seldom eliminate all the cancer cells. Operation does very little good if cells are left. Recurrences are prone to take place in fat people, probably due to the difficulty of complete removal rather than the lack of resistance. In most statistical reports operations are considered beneficial if the patient survives three to five years. On the other hand, many cases will harbor malignant tissue for years without activity.

It must be remembered that cancer does not destroy life, per se, but becomes fatal only when it destroys the function of vital organs.

A review of reports of surgical results show 40 per cent are free of malignancy after three years and about 30 per cent after five years. The average natural life in cases with cancer of the breast is about three years. Therefore the three-year results from surgery doesn't seem to accomplish very much.

The question of operable curability is very pertinent. Since 1897 when Halsted's operation became effective only 10 per cent has been added to the five-year cures. However, with this radical procedure the ultimate limit of tissue removal has been reached. This frequently extends beyond the cancer involvement. Therefore some means must be devised to replace radical surgery by a more or equally effective method.

X-rays and radium therapy have been employed about thirty years. Some benefit was derived in the early days of radiation, but the biological and physical properties have been more thoroughly understood the past ten years. Radiation therapy fifteen years ago was comparable to the dark era in surgery, 3000 B. C. Even in that age axillary involvement was known and attempts were made to treat cancer by cautery, which is not bad treatment at the present.

There are a few individuals who deny the therapeutic value of radiation, but claim it is helpful in hopelessly advanced cases. If radiation is beneficial in advanced cases, it should be more effective in early cases. Skepticism is usually due to ignorance of the course of disease, application of physical agents, and to observation of cases that are poor subjects. Some think that radiation stimulates the growth of malignancy, contrary to experimental reports. Recurrence after postoperative radiation indicates that resistant cells were left by the surgeon.

Favorable results cannot be obtained in every case. There are a few cases that are deprived of the trial of radiation benefit. There is no way to determine which cases will be benefitted without trial.

Radiation therapy consists of the application of radium and roentgen rays in accurately measured dosage to the correct location. Every case should have consultation and co-operation between surgeon and radiologist who are familiar with each other and understand each other's technique and his own limitations. A definite plan should be decided upon before anything is done.

This discussion deals only with postoperative roentgen therapy. The report consists of 103 cases operated upon and receiving post-operative therapy during the years 1922 to 1925 inclusive. Recurrent, metastatic, and inoperable cases are not included. Every case has had microscopic confirmation. Eight cases that could not be traced are listed as dead. Four cases had bilateral involvement. It could not be determined if the second breast was metastatic. These were alive for over five years.

Ten patients in this series died from other causes. If they lived beyond the five-year period without evidence of disease, they were classed as five-year cures.

They were grouped according to amount of involvement. Group I, free of axillary nodes. Group II, movable tumor, minimum skin involvement and axillary nodes. Group III, more involvement but still considered operable. In Group I, 77.8 per cent are now free of disease. Group II, 56.3 per cent are free of disease and 61 per cent lived for five more years. Group III, only 18.7 per cent survived the five-year period.

A combination of all groups showed that 50.5 per cent survive the five-year period and that 42.7 per cent were free of evidence of disease for the same period.

Reports show that not over 30 per cent are free of cancer after five years from surgery alone. As a comparison, this report indicates that nearly 43 per cent are free of disease from postoperative roentgen therapy after five years. There must be some benefit from such a measure.

SURGERY — GENERAL AND ABDOMINAL

By John L. Dies, M.D.
1213 Exchange Building, Memphis

Carcinoma of the Thyroid Gland. T. P. Dunhill, C.M.G. The British Surgical of Surgery, Vol. XIX, No. 73, July, 1931. Pgs. 83-112.

Leaving scirrhus out of this survey, for nothing has been observed which adds to our knowledge of it, we have evidence of epithelial hyperplasia occurring in papilliferous adenocarcinoma, in lateral aberrant thyroids, and in malignant adenoma. The first two of these have so many points in common that they would seem to be practically similar conditions. Is malignant adenoma essentially different? We know that the hyperplasia which thyroid epithelium undergoes in its attempt to cope with demands made upon it, or as a response to stimulation, may be either papilliferous or follicular in type. Then we remember Aschoff's work where he points out that benign adenomata originated as tiny areas of epithelial proliferation evidently as a result of irritation or stimulation. The proliferation continues with gradual increase in size until the encapsulated nodules which we recognize clinically are produced. The majority of these remain benign, and many degenerate. In the few which epithelial activity continues and invasion of vessels of the capsule occurs, we should like to believe that this is the result of continuance or irritation or stimulation. It does not seem unreasonable to suppose that the same factors are at work and analogous effects brought about in malignant adenoma and in papilliferous adenocarcinoma.

The investigation of our material has compelled me to place our cases in a sort of linear series by which we pass by degrees of hyperplasia which may resolve by appropriate treatment, to benign neoplasms, and finally to invading and disseminating growths. The graduation between each member of the series which along one line leads to papilliferous adenocarcinoma and along the other to malignant adenoma, is so insensable that I am persuaded that we are confronted with a series of responses not different in kind, but only differing in degree. That there is some connection between functional capacity and this hyperplastic response is suggested by the frequency of the papilliferous change and the period at which it takes place in lateral aberrant thyroids, the tissue which is probably imperfectly developed and therefore of low functional value, and by the higher incidence of malignant adenoma in centers of endemic goiter where the affected glands are subefficient.

Although carcinoma of the thyroid is rare in comparison with its occurrence in some other organs such as the breast and the uterus, and therefore material for research is scarce, and although in the early stages the difficulties of drawing the line dividing innocency from malignancy are so great, this organ presents some unusual advantages is the extreme responsiveness of the thyroid gland to the demands of the organism of the human beings, and the wide range of these demands (varying from puberty to grave psychic disturbances, and possibly endocrine imbalance), while in animals, as in brook trout, the gland may be subjected to experimental observation. This responsiveness is such that deviations from the normal are quickly recognized and are reflected in the histology of the gland. Apart from malignancy, many of its diseases are, for the moment, dealt with surgically, and therefore much material is available for the investigation of the histology of its very varied pathological conditions, as well as its chemical and biolofical activities. This given opportunity to correlate the work on innocent and malignant tumors of the thyroid gland with that of Lenthal Cheatle on "The Primary Tumor in Breast Carcinoma," of Simpson Handley on "The Mencae of the Papilloma," and of Robert Muir on "The Intraepithelial Growth of Carcinoma" (preceding invasion of the basement membrane). It should enable us clinically to avail ourselves of the work of Marine and his coworkers, of McCarrison, Mellanby, and others, who have made such valuable contributions to the animal experimentation side of this problem.

1. In our cases there are three types of cancer of the thyroid: scirrhus, papilliferous adenocarcinoma and malignant adenoma.

2. Scirrhus does not differ from the same disease occurring elsewhere in the body.

3. In the thyroid gland epithelial proliferation is the characteristic response to stimulation. The proliferation may resolve spontaneously or under treatment: it may from a benign tumor, or it may from a tumor which invades and disseminates. These stages merge into one other by insensible gradations. These histological gradations cause difficulty in deciding just when a tumor has become malignant.

4. Proliferation of thyroid epithelium may be papilliferous or follicular in type. Papilliferous adencarcinoma may be an ultimate result of the former, malignant adenoma of the latter type.

5. It is suggested that the cause of carcinoma is stimulation, which may be normal and affecting tissue which is sub-efficient, or so excessive in degree as to be abnormal and amount to irritation.

6. Although in cases of carcinoma of the thyroid specific glandular structure is frequently retained both in the parent growth and in the metastases, the essential character of the disease conforms to the same laws observed in carcinoma of other glandular organs, and its cause is possibly the reaction of the glandular epithelium to irritation as suggested by other workers in, for example, carcinoma of the breast.

1. A nodule in a thyroid gland should not be regarded as of no importance, and early changes in the signs or symptoms associated with it should induce the practitioner to investigate the cause of these changes.

2. Histological examination should be made in every case of removal of thyroid tissue, and sections should be taken from different areas.

3. Advanced cases should not be regarded as hopeless. When the condition of the patient justifies it, as much of the tumor should be removed as possible, and then x-ray treatment commenced. By this means comfort is given, and life is sometimes prolonged to a surprising extent.

UROLOGY

By Tom R. Barry, M.D., F.A.C.S.,
and F. K. Garvey, M.D.
Medical Building, Knoxville

Sterility in the Male. Victor D. Lespinasse, Chicago, Ill. Transactions Chicago Urological Society, Vol. I, 1931.

The author describes a comprehensive procedure for determining sterility in the male. He stresses the fact that at least half the causes of sterility are due to the male and the fact that the examination of the husband is simpler and more certain than in the female, advises carrying it out on him before anything is performed on the wife.

The first thing of importance is to get a history and determine if there has been anything in the history to cause a closure of the tubes leading from the testicles to the urethra, or anything to destroy the spermatogenic portion of the testicles.

Next comes examination of the testicles, epididymes, and vasa for absence of either, nodules, infiltrations or variations in size. If these are normal the examination of semen comes next.

Specimens obtained except by sexual intercourse are unreliable except from a positive standpoint. This is examined for presence or absence of spermatozoa. If present the number, shape, and motility is determined. He thinks that the amount of motility is important to impregnation, and this varies with the constitutional vigor and state of health of the individual. Treatment for deformed sperms consists in endocrine, vitamen, and diatetic therapy. A high protein diet rich in vitamins is indicated.

The absence of sperms means obstruction to their leaving the testicle or to azoospermia. The former usually means a history of gonorrhea, mumps, or trauma. The latter is due to no productions of sperms. This occurs in two conditions: First, in absence of the spermatogenic portion of testicle without loss of sexual power. The other involves not only the spermatogenic portion but the internal secrectory portion as well. Neither of these types is improved by treatment.

Another factor in sterility is the effect of pathological changes in the secretion of the prostate or seminal vesicles. Such fluid, as infection with pus often causes, is detrimental to the sperm. Further than this, infection may cause plugging or stricture of the ejaculatory ducts which may require dilation.

This article impresses me as approaching the subject of sterility with common sense. We should ascertain first whether the sperm, which is absolutely necessary to impregnation, is really being produced or if produced is reaching the female in a healthy condition. If all this is found to be normal, then we can go on with the examination and antisterility procedures in the female.

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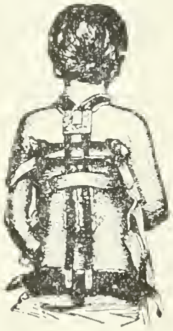

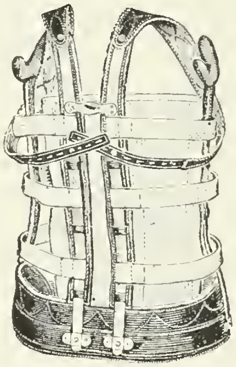

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"SPRUE"*

J. W. McElroy, M.D., Memphis

SIR Patrick Manson differentiated this disease by the name of Sprue in 1880, taken from the Dutch word, spruw (meaning smooth). He insisted that it was a disease sui generis, entirely apart and distinct from all other intestinal affections, and defined it as "an insidious, chronic, remitting, catarrhal inflammation of the mucous membranes of the alimentary canal, occurring particularly in Europeans, who are residing or who have resided in tropical or sub-tropical climates." Ashford defines sprue as "a chronic disease characterized by a sore and beefy tongue, a gaseous bowel, a small liver, a pale foamy, voluminous diarrhea, wasting and anemia.

In recent years there has been considerable interest in cases presenting the classical signs of tropical sprue, but occurring in individuals who are known to have never been in tropical countries. Of special interest in many of these cases is the close resemblance of the blood picture to that of pernicious anemia. Indeed, some writers, Christian, Wood and Reed, have suggested the two diseases are the same. There have been many cases of so-called non-tropical sprue reported in this country and abroad. E. J. Wood, of North Carolina, collected all cases of non-tropical sprue occurring in the literature up to 1915. Among writers reporting on the subject since then may be mentioned: Lambright of Cleveland, Wood in North Carolina, Silverman, Simon and Misser in Louisiana; Fontaine, Krause and Swink of Memphis, Tenn., and F. E. Marsh of Chattanooga, Tenn., the latter reporting thirty cases at the last meeting of the Tennessee State Medical Association, and Thaysen reports five cases from Denmark.

From many of these reports one is likely to get the impression that sprue is a relatively common disease in the United States, especially in the Southern part. However, the case reported in this paper is the first I have met with and my associate, Dr. J. B. McElroy, recalls having seen only one other case in about forty years of practice. In looking over the records of the Memphis General Hospital since 1922, there were to be found recorded only two cases diagnosed as sprue; they both occurred in infants under six months of age and from the records I would not agree with diagnosis of either case.

We meet with many cases of rather resistant diarrhea, lasting as long as six to eight weeks and after excluding the possibility of ameobiasis, pellagra or local conditions in the rectum, we have so far been able to class all of them as gastrogenous diarrheas, secondary to achlohydria. This, together with the scarcity of cases of sprue reported from this region, makes one wonder if sprue is quite so prevalent in this country as some of these reports would lead one to believe.

The etiology of sprue, in spite of the vast amount of research on the subject, remains unknown. It has been regarded as a deficiency disease and as an infectious disease of unknown cause. Ashford at one time believed it to be due to the Monilia psilosis. Later he advances the opinion that there is a nutritional unbalance in the individual which in the presence of a high carbohydrate and fat diet, brings about a failure of digestive glandular activity of the liver and pancreas and upon this condition is superimposed the Monilia psilosis which produces the picture recognized as sprue.

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*Read before the Tennessee State Medical Association, Memphis, April 12, 13, 14, 1932.

There is widespread interest in the subject of sprue not only as a disease entity but also because of the possibility of its etiology being identical with that of primary pernicious anemia. However, the center of interest seems to have focused on the Monilia psilosis of Ashford and opinions are divided either for or against the organism as the cause of sprue. Among writers seeming to confirm Ashford's work may be mentioned E. J. Wood in North Carolina, Bastedo of New York, Baumgartner and Smith of Clifton Springs, N. Y., L. W. Smith of the Philippines, and William Krause of Memphis, Tenn. Those not in accordance with the results of Ashford are: Hannibal and Boyd of the Department of Bacteriology, University of Texas; Manson-Bahr of the London School of Tropical Medicine; the staff of the Bombay Bacteriological Laboratory (India) headed by Fairley and Mackie; Castellani in Ceylon, and Charles Weiss in San Juan, Porto Rico.

The chief symptoms of sprue according to Low may be tabulated as follows:

1. Loss of energy.
2. Loss of weight.
3. Dyspeptic distension of the abdomen.
4. Morning diarrhea. White, frothy stools.
5. Sore tongue and mouth.
6. Small liver.
7. Anemia, especially in the later stages.
8. Sometimes a low blood calcium.

The disease rarely occurs in children and is most frequently encountered between the ages of twenty and sixty years. It would seem that men and women are about equally affected.

The loss of weight may be taken as a constant feature of the disease. No disease, with perhaps the exception of cancer, produces such a rapid and extreme loss of weight.

The tongue is frequently red, inflammed, and very painful, the epithelium destroyed, and often minute vesicles or small ulcers are seen along its margin. On recovery the tongue may appear normal. Of Low's one hundred and fifty cases, one hundred and one had tongue lesions.

One of the outstanding features of sprue is the diarrhea, which has certain characteristics, notably, the large and copious stools, the pale or clayey color, the amount of contained gas, the sour, nauseating and penetrating odor. The diarrhea usually comes on in the early morning but may occur at any time. The Monilia psilosis of Ashford is frequently found on culture of the stools and while it may not be the etiological factor in the disease, I should be inclined to agree with Baumgartner, and feel much safer in my diagnosis when the organism was found. The absence of coloring matter in the stools is interesting. Bile is still secreted, but the coloring matter, the bilirubin, is said to be changed in the intestines into a colorless substance known as leuco-bilirubin or urobilinogen. The analysis of sprue stools has shown a great excess of fats, with the fatty acids in great excess of the neutral fats; this indicating that a certain amount of splitting is taking place and that there is no pancreatic insufficiency in the sense of absence of lipase. Apparently owing to lacteal destruction the digested fat is not absorbed and is passed in the faeces.

The liver is shrunken and the dullness to percussion is consequently diminished, and this by most writers is thought to be a part of the general atrophy. Certain investigators in India have shown that in sprue the liver is not affected to such an extent as to show impairment to liver function tests.

Tetany and low blood calcium figures have frequently been reported, as well as remarkable results in the treatment with calcium lactate and parathyroid extract (Collip) by various writers, notably Scott in England, Baumgartner of Clifton

Springs, and Starr and Gardner of Chicago. According to Scott, the percentage of ionic calcium may be utilized as a guide to the therapy of sprue and also in the differential diagnosis.

The Committee in Bombay confirmed Scott's work of a lowering of ionic calcium in most of their fifty cases, but they did not observe any values less than 7.4 mg. per 100 cubic centimeters and since tetany required a calcium content as low as 6 mg., their conclusion was that sprue was not caused by a perverted parathyroid metabolism.

Ashford and Hernandez made a study of the blood calcium in sprue and found that low total values for serum calcium occurred not only in cases of sprue but in the majority of cases of serious malnutrition in Porto Rico.

Low and Manson-Bahr think that neurological findings of combined degeneration of the cord never occur in sprue.

An examination of the gastric contents may show normal amounts of free hydrochloric acid, a hyperchlohydria, or an achlohydria. In many cases there may be a return of free hydrochloric acid to normal limits, as in the case reported here and in Swink's case.

The blood picture has received attention from a great number of workers. Ashford considers the anemias of sprue as falling into one of two divisions: (1) the nonmegaloblastic, or so-called secondary anemias, and (2) the megaloblastic, medullary, or primary anemias. With the advent of liver therapy we are able to further divide the "pernicious" anemias into those which yield a definite rise in reticulocytes and those which do not produce this phenomenon after treatment with liver or potent liver extract. Ashford has divided these "pernicious" types of anemias into (1) dysplastic, (2) hypoplastic, and (3) aplastic types.

By the term dysplastic anemia he would designate those cases which show a hyperplasia of the bone marrow and a well defined shower of reticulocytes following the use of liver or some adequate extract.

What happens in hypoplastic anemias, Ashford states, "is more or less a matter of conjecture, but whether the marrow is overcrowded with megaloblast, as in the former case, which in spite of this undefined stimulus have failed to respond, or whether there has been a great reduction in the number of megaloblast to a point insufficient, notwithstanding the stimulus, to produce a well defined rise in the number of reticulocytes in the circulating blood, the fact remains that one is justified in using the term hypoplastic in those cases in which liver preparations have failed to produce a shower of reticulocytes.

The term aplastic anemia he would use to indicate that form of pernicious anemia, in which the only possible justification for diagnosis would be in the examination of the bone marrow histologically.

That a dysplastic and hypoplastic type of anemia, as defined by Ashford, does occur in sprue, is borne out by many case reports, among which may be mentioned cases by Ashford, Baumgartner, and Porter and Rucker.

In most of the long standing, chronic cases of sprue and in those with a severe diarrhea, the anemia is severe (below two million, Low) and of the macrocytic type.

M. M. Wintrobe of New Orleans has recently published an interesting article in which he shows that the volume, hemoglobin content, and hemoglobin concentration of the average red corpuscle of any sample of blood may be very simply calculated when the red cell count, the hemoglobin and relative volume of packed red cells in that sample are known.

It will probably be well to define the terms "Mean Corpuscular Volume," "Mean Corpuscular Hemoglobin," and "Mean Corpuscular Hemoglobin Concentration."

Mean corpuscular volume is the volume of packed red cells in cubic centimeters per 1,000 c.c. of blood divided by the red cell count in millions per cu. mm. The normal being considered 85 cubic microns and values below 75 and above 95 cu. mm. are considered abnormal.

Mean corpuscular hemoglobin is the hemoglobin in grams per 1,000 c.c. of blood divided by the red cell count in millions per cu. mm. The normal being 28 to 29 micrograms and values below 26 and above 31 are considered abnormal.

Mean corpuscular hemoglobin concentration is the hemoglobin in grams per 100 c.c. of blood divided by the volume of packed red cells in cu. cm. per 100 c.c. of blood times 100. The normal being 35 per cent. Values between 33 per cent and 39 per cent are considered normal.

Wintrobe draws the following conclusions from his studies:

(1) In cases of pernicious anemia and sprue the mean corpuscular volume and the mean corpuscular hemoglobin of the red blood cells are significantly greater than normal and occur so constantly as to afford a simple and readily available aid in diagnosis.

(2) The mean corpuscular hemoglobin concentration is not changed and shows no correlation to the red cell count.

(3) The upper limit of the mean corpuscular volume has been arbitrarily fixed at 95 cu. u. and higher values than this have rarely been found in conditions other than pernicious anemia and sprue.

(4) The mean corpuscular volume and the mean corpuscular hemoglobin were highly correlated with each other and an increase in them is a significant change in the blood of pernicious anemia and sprue.

(5) The increase in volume and in the hemoglobin content tend to be parallel, with the result that the concentration of the hemoglobin in the corpuscles is not significantly altered.

The differential diagnosis of sprue: The conditions from which sprue must be differentiated are:

(1) Gastrogenous diarrheas, secondary to achlohydria.

(2) Fatty diarrheas associated with pancreatic disease.

(3) Coeliac Disease (intestinal infantilism) or the Gee-Herter Syndrome.

(4) Pernicious Anemia of the Addison-Biermer type.

There should be experienced no great difficulty in differentiating a typical case of sprue from the first three conditions, and because of the lack of time this will not be discussed. The following chart shows the points of similarity and differentiation between sprue and pernicious anemia.

Sprue	Pernicious Anemia
1. Insidious onset.	1. Insidious onset.
2. Occurs pre-eminently in adults.	2. Occurs pre-eminently in adults.
3. Men and women affected alike.	3. Men and women affected alike.
4. Occurs primarily in tropical climates.	4. Climate has no effect.
5. Loss of energy and weakness.	5. Loss of energy and weakness.
6. Loss of weight; emaciation extreme.	6. Usually no marked loss of weight.
7. Sore tongue.	7. Sore tongue.
8. Diarrhea characteristic—copious, white, frothy, acid stools, occurring usually in the early morning. Monilia psilosis frequetly found in the stool.	8. Diarrhea not distinctive. Monilia psilosis rarely found.
9. Small liver frequent.	9. Large liver—the rule.
10. Spleen—normal.	10. Spleen—frequently enlarged.
11. Free Hcl—normal. increased or absent.	11. Free Hcl — practically always absent.
12. Neurological changes—rare or never.	12. Combined degeneration of the cord—frequent.
13. Tetany—occurs frequently.	13. Tetany — does not occur.
14. Low serum calcium—frequent.	14. Low blood calcium—rare or never.
15. Icterus Index—not so high, 10.6.	15. Icterus Index—higher, 16.9.
16. Arneth Index — about normal, 60.	16. Arneth Index—shift to right, 33.
17. Severe macrocytic anemia.	17. Severe macrocytic anemia.
18. Few nucleated red blood cells.	18. Relatively more nucleated red blood cells.
19. Megacolon—frequent.	19. Megacolon — rare or never.

The only two differential points in the blood picture of the two conditions seem to be the normal Arneth Index and the few nucleated red blood cells in sprue.

Treatment: The essentials in the treatment of sprue are a restriction of the carbohydrates and fats, a high calorie milk, meat or fruit diet or a combination of these. The use of liver or adequate liver extract or ventriculin, and calcium in the form of calcium lactate and parathyroid extract (Collip) in those cases with low blood calcium. For a more detailed account of the treatment you are referred to the excellent treatises on the subject by Low, Manson-Bahr, Scott and others.

CASE REPORT

Mrs. R. B., age 62 years, white female, occupation, light house work. Consulted us October 13, 1931, complaining of lack of appetite, sore tongue and mouth, gas, flatulence, diarrhea (four to ten stools in the 24 hours), nausea, loss of energy, weakness and loss of weight (17 pounds since the first of the year).

The past history is not suggestive, the patient having been a native of West Tennessee all her life, except for a week's visit to Canada and a visit of two weeks to Havana, Cuba, nineteen years ago, and has never had any serious illness prior to the onset of the present illness.

The family history is suggestive in that she thinks that her father probably died of pernicious anemia and was said to have suffered with an enlarged spleen. Two great paternal aunts were said to have died of cancer.

The present illness began insidiously about one year prior to her first consultation. She first noticed that she began to tire out easily and to gradually lose her strength and weight. About six months prior to this time her tongue and mouth became sore, especially the tongue; it felt "scalded" and she noticed small ulcers on the edge. Since then she has had several of these attacks of sore tongue. About three or four months before coming to us she began having attacks of diarrhea, would have six or seven loose, large, whitish, frothy stools a day some days, but as a rule has about three of these stools a day. The diarrhea is more frequent in the afternoon and at night rather than in the early morning. She has never noticed any blood or mucous in her stools. Lately the stools have been darker in color and she thinks this is probably due to her having taken Lilly's iron and liver extract No. 55 for the past three months. She has no appetite, is extremely weak, and has been bothered a great deal for the past year with nausea (never vomits), a marked distension of the abdomen, especially gas in the lower bowels. There has never been any jaundice. In June, 1931, she went through a "clinic" here in Memphis where she got the impression they thought she had pernicious anemia, and was told that an x-ray (Graham-Cole) showed a non-functioning gall bladder, though she has never had any attack simulating biliary colic.

Temperature 98.6 degrees, F.; pulse 80 to the minute; blood pressure, 120 systolic, and 80 diastolic. Physical examination reveals an undernourished and emaciated white female apparently not acutely ill, although noticeably weak. Height, 5 feet 2 inches (without shoes), weight 71 pounds (with clothes), average weight prior to onset of present illness, 105 pounds. The skin and mucous membranes are pale and anemic in appearance. The eyes, ears, nose and sinuses show nothing remarkable. The tongue has the appearance of raw beef, dorsum deeply furrowed, rather pale, and there are several ulcers along the margin. There are many teeth missing, replaced with partial plates. There are no superficial glandular enlargements, the thyroid is not enlarged. The heart and lungs reveal nothing abnormal. The abdomen is distended, dome-shaped, percussion note tympanitic, and gives a doughy feel when palpated. There is no tenderness and no masses are felt. The extremities show nothing remarkable. The neuroligical examination showed no abnormal findings. Gordon, Oppenheim, Babinski and Romberg's signs are negative. The superficial and deep reflexes were normal. The vibratory sense was normal. Roentenographic study of the gastro-intestinal tract showed a moderate degree of megacolon.

Laboratory data: Hemoglobin 56 per cent (Shali); red blood cells, 1,910,000 per cu. mm.; color index, 1.5; volume index, 1.4; volume of packed red cells, 35 cu. cm. per 100 c.c. of blood; mean corpuscular volume, 116 cu. u.; mean corpuscular hemoglobin, 48 micromicrograms; mean corpuscular hemoglobin concentration, 38 per cent; white blood cells, 3,400 per cu. mm.; polymorphonuclear neutrophils, 46 per cent; lymphocytes, 52 per cent; large mononuclears, none; eosinophils, 1 per cent; basophils, 1 per cent; no nucleated red blood cells seen; moderate anisocytosis and poikilocytosis; many macrocytes noted; no polychromatophilia; reticulocytes, 0.5 per cent; Arneth Index, 53.5; blood calcium, 11.3 mg. per cent; Wassermann and Kahn reactions negative; fragility test reveals that hemolysis begins at 0.40 and is complete at 0.32; Platelet count, 180,000 per cu. mm.

Five gastric analyses were made on different occasions; the first showed free Hcl 7 degrees; total acidity, 15 degrees; occult blood negative (benzidine test). Two analyses showed a complete absence of free Hcl, and the last analysis done on April 1st showed free Hcl 23 degrees; total acidity, 38 degrees; occult blood negative.

Stools: Five stools were examined on different occasions. They were all typical fatty stools, from clay to chalky white in color, formless, mushy, somewhat frothy, with considerable gas, acid to litmus, negative for ova, parasites and occult blood. When stained with Soudan III showed an excessive amount of fatty acid crystals and soaps and only relatively few neutral fats. There was only an occasional undigested muscle fiber seen. Cultures were made from three stools on different occasions in the Baptist hospital. From one a Monilia was recovered and two were negative. The positive culture was carried to Dr. Michelson, professor of bacteriology at the University of Tennessee, and he was kind enough to isolate this organism and found that it corresponded in every way, including the sugar fermentation tests, to Ashford's Monilia psilosis.

Urine: Clear, amber, acid to litmus, specific gravity 1,010, no albumin, no sugar, tests for indican and urobilin negative, the microscopic examination was essentially negative. Several other specimen of urine were examined, but showed nothing worthy of note.

Treatment and course: Following the examination in the office the patient was permitted to return home and the following instructions written to her home physician. The history and findings are strongly suggestive of pernicious anemia.

Though the presence of free hydrochloric acid in the stomach contents, small as it is, makes one hesitate a little about making a flat diagnosis of this. The history, particularly the family history, is somewhat suggestive of chronic hemolytic icterus, though the patient has no jaundice, or enlarged spleen, the fragility test was within normal limits. Then there is to be considered Sprue. In any event I would suggest the following regime and would like to see the patient again in about a month.

Diet: Eliminate cereals and sugars, and limit also fats. Other foods may be taken moderately, and freely of milk and ripe bananas, without sugar or cream. Take 10 grams of Iron and Ventriculen (Parke, Davis Co. preparation), with or after meals, and 15 drops of Dilute Hydrochloric Acid in a glass of water with meals.

The patient returned on November 30th, 1931, and there was no material change in her condition. The patient again returned home and was told to take Lily's Liver Extract, one vial t. i. d., 3 or 4 pints of milk and 2 or 3 pints of strawberries a day. We did not hear again until January 13, 1932, when she came in stating that she could not see where she had improved any since she was first here. Had been taking acid and liver, but was unable to eat bananas and could not get strawberries. Has gained no weight or strength; had an attack of diarrhea 10 days ago, that is much better at present. Also has had two attacks of sore tongue; no material change in laboratory findings.

The patient was urged to go into the hospital at this time, but was unable to do so, saying that she would return later, which she did on January 26th, 1932, and remained for 12 days, through February 9, 1932. She was put on one quart of strawberries, a quart and a half of sweet milk a day, also scraped beef patties with very little butter. On the 28th of January, 1932, she was started on Ventriculen (P. D.) 10 grams three times a day. On February 5th, 1932, the milk was increased to three quarts a day. When the patient entered the hospital she was extremely weak; weight 75 lbs.; the hemoglobin was 45 per cent (Sahli), and red blood cells 1,870,000; white blood cells 1,550; polymorphonuclear leucocytes, 56 per cent; small lymphocytes, 41 per cent; large mononuclears, 1 per cent; eosinophiles, 2 per cent; reticulocytes, 1.4 per cent. The patient's general condition showed considerable improvement and the blood a rather sluggish response to the treatment. On leaving the hospital the tongue was no longer sore and looked considerably better; she was having two large white cow-pad stools a day, afternoon and night, and weighed 74 3/4 lbs., a gain of

4 3/4 lbs.; hemoglobin 60 per cent (Sahli); red blood cells 2,510,000; white blood cells 4,250. The maximum reticulocyte response was on the eighth day, when they reached 4.4 per cent, after which they fell to 2 per cent. The accompanying chart and graph show in detail the blood picture.

The patient has been into the office twice since she left the hospital, once on March 16, 1932, when she was put on one of Manson-Bahr's diets and advised to take Volentine's Liver Extract E. 29 in amounts equivalent to 630 gms. of raw liver a day, and the last time, April 1st, 1932. On her last visit the patient was very much pleased with her progress, stating that she felt stronger and better in every way; the only symptoms she complained of were slight gas and flatulence. She had carried out directions as to diet faithfully but had not taken the liver extract. At this time she weighed 89 lbs., a gain of 14 lbs.; her tongue appeared to be absolutely normal; hemoglobin 64 per cent (Sahli); red blood cells 3,000,000; color index 1.08; volume index 1.3; volume of packed red blood cells 36 per 100 c.c.; mean corpuscular volume, 120 cubic microns; mean corpuscular hemoglobin, 42.5 micromicrograms; mean corpuscular concentration, 35 per cent; no nucleated red blood cells; reticulocytes, 0.5 per cent; white blood cells, 3,800; P. M. N., 59; S. L.'s, 36; L. M.'s, 3; E. O.'s, 2; Bas. 0; Arneth Index, 60; Free Hcl, 23 degrees; total acidity, 38 degrees.

CHART

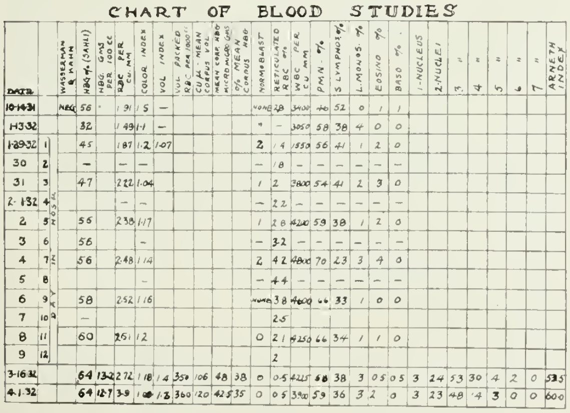
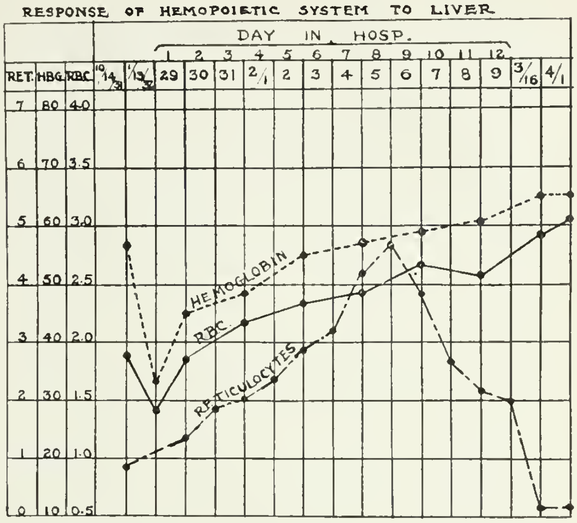


CHART OF BLOOD STUDIES

DATE	DAY IN HOSP.	WASSERMAN & KAHN	HBG % (SAHLI)	HBG. GMS PER 100 CC	RBC PER CU. MM	COLOR INDEX	VOL INDEX	VOL PACKED RBC PER 1000 CC	CU μ - MEAN CORPUS VOL	MEAN CORP. HBG MICROMICROGMS	% MEAN CORPUS HBG	NORMOBLAST	RETICULATED RBC %	WBC PER CU MM	PMN %	S LYMPHOS %	L. MONOS. %	EOSINO %	BASO %	1-NUCLEUS	2-NUCLEI	3 "	4 "	5 "	6 "	7 "	ARNETH INDEX
10-14-31		NEG	56		1.91	1.5	—					NONE	2.8	3400	46	52	0	1	1								
1-13-32			32		1.49	1.1	—					"	—	3050	58	38	4	0	0								
1-29-32	1		45		1.87	1.2	1.07					2	1.4	1550	56	41	1	2	0								
30	2		—		—	—						—	1.8	—	—	—	—	—	—								
31	3		47		2.22	1.04						1	2	3800	54	41	2	3	0								
2-1-32	4				—	—						—	2.2	—	—	—	—	—	—								
2	5		56		2.38	1.17						1	2.8	4200	59	38	1	2	0								
3	6		56			—						—	3.2	—	—	—	—	—	—								
4	7		56		2.48	1.14						2	4.2	4800	70	23	3	4	0								
5	8					—						—	4.4	—	—	—	—	—	—								
6	9		58		2.52	1.16						NONE	3.8	4600	66	33	1	0	0								
7	10		—										2.5														
8	11		60		2.51	1.2						0	2.1	4250	66	34	1	1	0								
9	12												2														
3-16-32			64	13.2	2.72	1.18	1.4	350	106	48	38	0	0.5	4225	68	38	3	0.5	0.5	3	24	53	30	4	2	0	53.5
4-1-32			64	12.7	3.0	1.08	1.3	360	120	42.5	35	0	0.5	3900	59	36	3	2	0	3	23	48	14	3	0	0	600



Wass., Kahn, 0.

Hbg. per cent (Shali), 56, 32, 45, 47, 55, 56, 58, 60, 64, 64.

Hbg. gm. per 100 c.c., 13.2, 12.8.

R. B. C. in million per cu. mm., 1.9, 1.5, 1.9, 2.2, 2.4, 2.5, 2.5, 2.7, 3.

Color Index, 1.5, 1.1, 1.2, 1, 1.2, 1.1, 1.2, 1.2, 1.2, 1.

Volume Index, 1.4, 1.3.

Vol. pkd. rbc. per 1,000 c.c. in cu. u., 350, 360

Mean corp. vol. in cubic microns, 116, 120.

Mean corp. hbg. in micromicrograms, 48, 43.

Mean corp. concentration in per cent, 38, 35.

Normoblast, 0, 0, 2, 0, 1, 0, 1, 0, 2, 0, 0, 0, 0, 0.

Reticulated rbc. per cent, .8, 1.4, 11.8, 2, 2.2, 2.8, 3.2, 4.2, 4.4, 3.8, 2.5, 2.1, 2, 5, 5.

WBC. per cu. mm., 3.4, 3, 1.5, 3.8, 4.2, 4.8, 4.6, 4.2, 4.2, 3.8.

PWN, per cent, 46, 58, 36, 54, 59, 70, 66, 66, 58, 59.

Lymphocytes, per cent, 52, 38, 41, 41, 38, 25, 33, 34, 38, 36.

Large Mononuclears, 0, 4, 1, 2, 1, 3, 1, 1, 3, 3.

Eosinophiles, per cent, 1, 0, 0, 3, 2, 4, 0, 1, 1, 2.

Basophiles, per cent, 1, 0, 0, 0, 0, 0, 0, 0, 0, 0.

1. Nucleus, 3, 3.
2. Nuclei, 24, 33.
3. Nuclei, 53, 48.
4. Nuclei, 30, 14.
5. Nuclei, 4, 3.
6. Nuclei, 2, 0.

Arneth Index, 53, 60.

BIBLIOGRAPHY

1. Ashford, B. K.: J. A. M. A., Vol. 93, No. 10, Sept. 7, 1929, p. 672.

2. Ashford, B. K.: Arch. Int. Med., Vol. 45, No. 5, May, 1930, p. 647.

3. Bassler, A., and Lutz, J. R.: Jour. A. M. A., Vol. 95, No. 26, December 27, 1930, p. 1961.

4. Baumgartner, E. A., and Jewett, C. H.: Arch. Int. Med., Vol. 46, December, 1930, p. 597.

5. Baumgartner, E. A.: Annals Int. Dis., Vol. 4, June, 1931, p. 497.

6. Brown, W. C.: Sprue and Its Treatment. William Wood & Co., N. Y.

7. Fontaine, B. W.: Med. Clin. North Amer., Vol. 12, p. 1223, 1929.

8. Krause, W.: Amer. Jour. Trop. Med., Vol. 1, p. 119, 1921.

9. Manson, P., Bahr, and Willoughby, H.: Quart. Jour. Med., Vol. 23, p. 411, 1930.

10. Manson, P.: Trop. Diseases, p. 322.

11. Marsh, F. E.: Jour. Tenn. State Med. Assn., Vol. 24, No. 7, p. 269, July, 1931.

12. Holmes, W. H., and Starr, P.: J. A. M. A., Vol. 92, No. 12, March 23, 1929, p. 975.

13. Low, G. C.: Quart. Jour . Med., Vol. 21, July, 1928, p. 523.

14. Swink, W. T.: Memphis Med. Jour., Vol. 7, No. 6, June, 1930, p. 108.

15. Serra, A.: Amer. Jour. Trop. Med., Vol. 9, p. 49, 1929.

16. Poter, W. B., and Rucker, J. E.: Amer. Jour. Med. Sci., Vol. 179, p. 310, June, 1930.

17. Tyner, J. D.: Amer. Jour. Trop. Med., Vol. 10, p. 435, 1930.

18. Starr, P., and Gardner, L.: Amer. Jour. Trop. Med., Vol. 10, p. 283.

19. Vaughn, J. M.: Quart. Jour. Med., Vol. 23, p. 213, 1929.

20. Weiss, C., and Lon Londron: Amer. Jour. Trop. Med., Vol. 9, p. 83.

21. Weiss, C., and Mandry, O. C.: Jour. Immunology, Vol. 16, No. 4, June, 1929, p. 283.

22. Weiss, C.: Arch. Path., Vol. 6, p. 885, 1928.

23. Weiss, C., Landron, F., and Mandry, O. C., and Wilkes-Weiss, D.: Annals Int. Med., Vol. 2, January, 1929, p. 1198.

24. Wintrobe, M. M.: Amer. Jour. Med. Sci., Vol. 181, No. 2, February, 1931, p. 217.

25. Wood, E. J.: Amer. Jour. Med. Sci., Vol. 169, No. 1, January, 1925, p. 28.

DISCUSSION

DR. J. B. McELROY (Memphis): This is a condition that I think we should look for in this vicinity, but one which does not occur with the frequency that recent literature indicates. Of course, that great trinity of diseases which are associated with the pernicious type of anemia are very interesting and often very difficult of differentiation. I think that we have made considerable advances in our classification of anemia in recent years with respect to a therapeutic indication. The contribution of Price Jones, Von Borros, Haden, Wintrobe and others have been of considerable value since they have made possible a classification of the anemias on the qualitative blood picture which is helpful from the therapeutic standpoint. With few exceptions the mean corpuscular volume of the red cells goes parallel to the diameter, and the former is much easier to determine. This enables us to classify the anemias into microcytic, nonnocytic and macrocytic. The latter is in indication for liver or stomach therapy. On the other hand, when we find a microcytic anemia we have the same sort of response from the proper administration of iron, and also an increase of the reticulocytes.

This case that has been presented was one of considerable difficulty in diagnosing. In another clinic in this city it had been diagnosed as pernicious anemia. When I saw the presence of free hydrochloric acid in the stomach contents, I at once doubted that diagnosis. Dr. J. W. McElroy is due the credit for working up the case, and I think shows it to be a case of sprue.

There is very little difference between the blood picture of pernicious anemia and some cases of sprue, unless it be the Arneth Index to which Baumgartner has particularly called attention, and the ovalicytosis to which Von Burrus has recently called attention anew. It requires a great deal of patience to arrive at a differentiation between these, particularly in making the Arneth count. When you sit down to count the different lobes of the polymorphonuclear leukocytes, one, two, three, four, five, and six nuclei, you have a considerable job on your hands, but it does seem, as we have known for a long time, that those of many lobes or a shift to the right or rather characteristic of pernicious anemia, whereas in sprue there is a normal index, that is the sum of the one, two and three nuclei is equal to about fifty or sixty per cent, and the macrocytes do not show the oval form.

It is always interesting, too, and important, to differentiate these conditions from the standpoint of treatment. Take, for instance, this case. The results depend upon your impression of the case as to whether or not the treatment will be successful. I am very glad to say that this woman came to us this morning and indicated that it is a very fine feeling to feel well after you have been in the throes of disease for a long period of time.

THE SURGICAL TREATMENT OF ARTERIAL ANEURYSM*

BARNEY BROOKS, M.D., Nashville

THE history of the development of the surgical treatment of arterial aneurysm would include a description of most of the important events in the history of the development of surgery. Antyllus described an operation for the cure of arterial aneurysm about two hundred years after the beginning of the Christian era. This operation remained the method of choice for fifteen hundred years. The essential principle of the Antyllus operation was a direct attempt to obliterate the aneurysmal sac.

After the discovery of the circulation of the blood by William Harvey, from long and painstaking anatomical studies John Hunter appreciated the significance of collateral arterial anastamosis and introduced an operative procedure founded on principles entirely different from those underlying the Antyllus operation. The essential principle of John Hunter's operation for arterial aneurysm was the reduction of blood flow into the aneurysmal sac by the application of a ligature in continuity at a point proximal and more or less remote from the aneurysmal tumor. The operation designed by John Hunter was very soon universally adopted as the method of operative treatment of arterial aneurysm. It is interesting to note, however, that James Syme made the following statement in 1860: "In common with other teachers of surgery I have inculcated the Hunterian principle for the treatment of aneurysm for more than thirty years, and I now feel it my duty to question its soundness."

After the establishment of aseptic surgery, a small group of surgeons particularly interested in the treatment of aneurysm gave up the use of the Hunterian operation and revived the Antyllus procedure. We may be justly proud of the fact that two American surgeons, Rudolph Matas of New Orleans and William Stewart Halsted of Baltimore, were the leaders in this advancement in the surgical treatment of arterial aneurysm.

If one appreciates thoroughly the reasons for these changes in the method used by those best informed, he will have acquired an understanding of the fundamental principles underlying the correct treatment of aneurysm of the peripheral arteries.

It is a very important fact that in the vast majority of instances of arterial aneurysm involving arteries outside the trunk, the pathological changes in the artery are limited to the immediate vicinity of the aneurysmal tumor. Surprising as it may seem to you, I am convinced that general arterial disease, and particularly that due to syphilis, is very rarely an etiological factor in the production of arterial aneurysm in other arteries than those contained within the thorax and abdomen. I have not encountered but one instance of aneurysm of an extremity which seemed to be due to syphilis. This was an aneurysm of the popliteal artery.

The Antyllus operation is a method of procedure which has as its object only the obliteration of the vessel at the site of disease. If the "old" operation is thus apparently so appropriate, why was it so universally discarded after the introduction of the Hunterian operation? The answer is to be found in the fact that before, during and for nearly one hundred years after John Hunter, nearly all operative procedures were associated with infection. In any large wound in which a large artery is exposed and in which infection develops, fatal secondary hemorrhage is almost certain to occur. The Antyllus operation, therefore, could not be used with any great success before the establishment of aseptic methods. In other words, patients operated upon by the Antyllus method in preantiseptic days were cured of the aneurysm, but died of secondary hemorrhage. The results of the application of the Antyllus operation in preantiseptic days were such as to cause Percival Pott to condemn every operative procedure except amputation for arterial aneurysm of the extremities; and Wilmer wrote in 1780 that he was unable to find a single well authenticated instance of popliteal aneurysm being cured by the old operation.

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*From the Department of Surgery, Vanderbilt University, Nashville.

*Read before the Tennessee State Medical Association, Memphis, April 12, 13, 14, 1932.

The operation of John Hunter was designed particularly for the cure of aneurysm of the popliteal artery, in which instances the most favorable results have always been obtained. The operation consists in simple ligature of the femoral artery in Hunter's canal. Hunter believed that the arterial wall was almost universally seriously diseased in the vicinity of the aneurysmal tumor, and he attributed the great frequency of fatal secondary hemorrhage after the Antyllus operation to the exposure of the diseased vessel. From a careful study of such records as we have of John Hunter's work, it would seem as if he chose to apply a ligature to an artery at a point considerably remote from the aneurysm because the vessel at such a point was not diseased. Abundant evidence, however, exists that Hunter clearly appreciated the physiological as well as the anatomical conditions, for he states that the proximal ligature causes a diminution in the force of the pulsating stream of blood and thus removes the most important factor in the continued progress of the disease.

Collateral arterial circulation is always relative to a particular point in the course of an artery. Every particular section of an artery has its own peculiar collateral circulation. There is a collateral circulation to the section affected by the aneurysm. These collateral paths are of secondary importance if the Hunterian operation is used. In this operation the significant and important paths of collateral circulation are those relative to the section of the artery which is occluded by the ligature. The blood passing through this collateral circulation is free to enter all of the arteries distal to the ligature and obviously the aneurysmal sac. If the collateral circulation about the site of ligature is very abundant, the aneurysmal tumor may be very little affected by the application of the ligature. If the collateral circulation about the ligature is very scant, little blood enters the arterial tree distal to the ligature. Blood flow into the aneurysmal tumor is thus almost completely stopped, but all of the tissues are equally deprived of blood flow and extensive gangrene inevitably follows. If the amount of collateral circulation about the ligature is, so to speak, a happy medium, the flow of blood into the aneurysmal tumor may be such as to permit the obliteration of this tumor by blood clot and yet be sufficient to nourish the tissues through the collateral paths about the site of the artery affected by aneurysm. This peculiarly favorable set of conditions apparently most frequently exists in the femoral artery in Hunter's canal, with an aneurysm in the popliteal space. There is, however, another cause for failure of the Hunterian operation. The coagulum which forms in the aneurysmal sac may extend either proximally or distally within the artery until one or the other orifice of the collateral arch about the aneurysm is occluded, and gangrene of the parts distal to the aneurysm ensues.

In preantiseptic days, the Hunterian operation was certainly the method most frequently successful, because of the fact that this operation could be performed through a small incision with exposure of but a small part of a large artery. Moreover, it was often done, perhaps, with but little disturbance of the arterial sheath. Fatal secondary hemorrhage, therefore, less frequently occurred. The Hunterian method of operating for aneurysm was subsequently extended by surgeons of the nineteenth century until it had been used in a great number of instances of aneurysms affecting all of the peripheral arteries. The medical literature of the 19th century contains the records of many cases operated upon. In general the results obtained were far better than had been accomplished with the old operation. Even in the reported cases, however, unfavorable results are frequently recorded. Instances of secondary hemorrhage, gangrene, and sepsis are found, as well as a considerable number of cases in which the course of the development of the aneurysm was but little affected by the operation.

After the development of aseptic surgery it became possible to go back to the use of the original procedure of Antyllus, that is a direct attack upon the seat of the disease. In this revival of the operative procedure best adapted to the cure of arterial aneurysm which had been made possible by the development of aseptic methods, Dr. Rudolph Matas has perhaps contributed more than any one else. I regret to say that a number of surgeons, even in America, still resort to the application of the Hunterian operation for the cure of arterial aneurysm.

At present there are two methods of procedure for the treatment of an arterial aneurysm which can be adequately exposed. One of them has as its purpose the complete extirpation of that portion of the artery affected by the aneurysm. The other method, devised by Dr. Matas, consists in opening the aneurysmal sac and completely obliterating the sac by the application of sutures placed within the sac. After all, these two methods differ but slightly. Whether one or the other is chosen, depends entirely upon the opinion of the operator as to the value of preserving the paths of collateral circulation which may exist within the walls of the aneurysmal sac. My own opinion is that the paths of collateral circulation in the wall of the aneurysmal sac are of little importance. I believe the paths of collateral circulation about an aneurysm lie at a distance from the aneurysmal sac. If the sac can be excised without disturbing the surrounding tissues, I believe it should be removed. If extirpation of the sac requires much disturbance of the surrounding tissues then it should be obliterated by the application of sutures within the sac according to the method of Matas.

REPORT OF CASES

Case I. Spontaneous popliteal aneurysm. H. B., Hospital No. 12760, colored, male, age 36, admitted to Vanderbilt Hospital, March 2, 1928.

History: Five years previous to admission, patient noticed a pulsating tumor on the posterior aspect of the right knee. No history of trauma. This tumor has gradually enlarged. He has been able to work continuously in the delivery department of the postal service. The right leg has been continuously somewhat larger than the left. One week previous to admission, began to have severe pain in the right foot. The great toe became numb and cold.

Examination: Typical aneurysmal tumor in right popliteal space. Entire right leg cooler than left. On the great toe there is an area of definite gangrene. Feeble pulsation in right dorsalis pedis artery. No pulse palpable in posterior tibial artery. Wassermann reaction negative. General physical examination reveals no evidence of disease other than aneurysm of the popliteal artery.

Operation, March 7, 1928: Femoral artery exposed. Temporary clamp applied. Aneurysmal tumor involving the popliteal artery and proximal portion of posterior tibial artery excised. Popliteal vein ligated.

Postoperative course: Convalescence uneventful. Area of gangrene on the great toe, which was definitely increasing in area previous to operation, immediately ceased to increase, and the ulcer at the site of gangrene healed rapidly. Patient was discharged from the hospital twenty-five days after operation, at which time he was able to walk with the aid of crutches. Patient soon returned to his work as a mail carrier. Examination nine months after operation, complete restoration of function of right leg. Right leg is slightly swollen, feeble pulsation palpable in right dorsalis pedis artery.

Case II. Traumatic aneurysm femoral artery. L. M., Hospital No. 23224, white, male, age 28, admitted to Vanderbilt Hospital June 5, 1929.

History: Patient received a gunshot wound in the left lower thigh two and one-half years ago. There was relatively no bleeding, and wound healed without difficulty. The gunshot wound was never sufficiently serious to induce patient to consult a physician. About five weeks previous to admission, left thigh became painful and patient noticed a small pulsating tumor which has grown progressively larger. The entire extremity became greatly swollen and there has been constant throbbing pain.

Since birth patient has had partial paralysis of right arm and leg. At the age of sixteen he began to have recurring attacks of unconsciousness. These attacks come on at intervals of two or three months and are apparently characteristic epileptic seizures.

Examination: The patient is obviously a congenital mental deficient. On entrance to the hospital the entire left lower extremity is tremendously swollen. Greatest amount of swelling over medial aspect of lower third of left thigh. Skin over this area tense and red. Definite expansile pulsation associated with systolic bruit. Feeble pulsation in the arteries of the left foot. Right leg and arm show characteristic evidences of congenital hemiplegia. Twenty-four hours after admission pain greatly increased in severity and there was a rapid increase in the swelling of the extremity, and the appearance of an extensive ecchymosis. It was obvious that the aneurysm had ruptured, and immediate operation seemed advisable.

Operation, June 6, 1929: Tourniquet applied to proximal aspect of the thigh. Incision over distal aspect of Hunter's canal. Large hematoma evacuated. Ruptured aneurysmal sac exposed. Aneurysmal sac opened wide. Afferent and efferent arterial apertures closed with interrupted silk sutures. Remainder of aneurysmal sac excised. Popliteal vein found occluded by thrombus. Tourniquet removed. All bleeding points ligated. Wound closed.

Postoperative course: For the first twenty-four hours following operation the obvious signs of grave anemia of the entire leg were present. Approximately twenty-four hours after operation, however, there was definite evidence of improvement in the circulation of the leg and subsequent convalescence was uneventful. Three months after operation, complete restoration of function of the extremity.

Case III. Traumatic aneurysm third portion axillary artery. S. H., Hospital No. 11928, colored, male, age 17, admitted to Vanderbilt Hospital January 22, 1928.

History: Two months previous to admission, patient received gunshot wound in the right shoulder. Immediately following the receipt of the wound, patient experienced a sensation of numbness in his right hand. One or two days later arm became painful and he noticed inability to move the forearm and hand. The wound healed after a short period of purulent drainage. Numbness disappeared but motor paralysis persisted.

Examination: Complete paralysis of all muscles supplied by median, radial and musculocutaneous nerves. No demonstrable sensory changes. Radial pulse absent. No demonstrable evidences of aneurysmal tumor.

Operation, January 25, 1928. Incision inferior to the right clavicle. First portion axillary artery exposed. Temporary occlusion of artery with appropriate clamp. Distal to the point of exposure of the axillary artery there was an irregular firm mass which apparently included all of the axillary nerves and vessels. Nerve cords carefully dissected free. Axillary artery found completely divided. Proximal and distal stumps communicated through a small false aneurysmal sac. Afferent and efferent vessels ligated. Fibrous wall of aneurysmal sac dissected free from nerves and excised.

Postoperative course: Convalescence uneventful. Patient discharged from hospital fifteen days after operation, at which time definite evidence of beginning recovery from motor paralysis. Three months after operation, patient reported completely recovered by family physician.

Case IV. Spontaneous aneurysm first portion axillary artery. G. H., No. 29276, white, male, age 45, admitted to Vanderbilt Hospital February 24, 1930.

History: Patient suffered from epileptic seizures for a period of twenty years. He has, however, for the past few years been able to prevent these attacks by taking five grains of luminal each day. Married; wife and two children living and well. No knowledge of ever having had any evidence of syphilis.

Two months before admission had pain in the right arm. Six weeks before admission noticed a lump below right clavicle. This tumor has gradually increased in size.

Examination: Well defined aneurysmal tumor just below right clavicle. Definite but slight diminution in the right radial pulse. Fingers of the right hand only show definite clubbing. Characteristic Dupuytren's contracture in the palm of the right hand. Wassermann reaction negative. General physical examination shows no evidence of disease other than aneurysm of the axillary artery.

Operation, March 5, 1930. Incision across right clavicle. Clavicle divided. Subclavian artery exposed. Temporarily occluded with appropriate clamp. Aneurysm exposed. Axillary nerve trunk dissected free from aneurysmal tumor. Aneurysmal sac opened. Part of posterior wall of sac formed by what appeared normal arterial wall. Attempt to reconstruct continuity of artery failed. The afferent and efferent vessels occluded with interrupted silk sutures. Most of aneurysmal sac excised.

Postoperative course: Convalescence uneventful. Six weeks after operation patient had resumed his work as a book binder. Right radial pulse faintly palpable. Examination two years after operation shows complete recovery of function of arm.

DISCUSSION

These four instances of aneurysm represent most of the features associated with arterial aneurysm of the large arteries of the extremities.

Cases I and IV had aneurysm develop spontaneously without any demonstrable influence of either trauma or syphilis. In Cases II and III, the etiological factor was a penetrating wound. Case I had at the time of operation a sufficient amount of arterial obstruction to produce gangrene. In Case II the aneurysm had ruptured just previous to operation, and if operative treatment had been delayed, extensive gangrene would almost certainly have developed. Case III demonstrates quite clearly a fact which has been frequently observed, often with disastrous results, that an aneurysm may exist in the axillary artery without the presence of any of the peculiar signs of aneurysm. There was no evidence that syphilis was the etiological factor in the causation of aneurysm in any of the cases. In all of the cases the operative treatment consisted in total, or almost total extirpation of the aneurysm. In Case I the vein concomitant with the diseased artery was purposely obstructed by ligation. In Case II the vein accompanying the diseased artery had already been occluded by thrombus. The veins accompanying the arteries in Cases III and IV were normal and were not ligated. In each instance there was a complete restoration of function to the affected extremity.

It is interesting to note that these four instances of arterial aneurysm are the only instances of aneurysm of the large peripheral arteries which have been observed in the Surgical Clinic of Vanderbilt University Hospital during a period of six years. During the same period, nine instances of arteriovenous aneurysm have been operated upon. In all of these instances the arteriovenous aneurysms were due to trauma. In thirteen instances, therefore, of aneurysm, eleven have been due to trauma. In only two instances has the aneurysm been spontaneous in development, and in neither of these instances was there any evidence of the existence of syphilis.

SUMMARY

1. Aneurysm of the large arteries of the extremities is a condition which is rarely encountered even in a surgical clinic in which a relatively large proportion of patients have syphilis. In none of the instances observed has syphilis been present.

2. The operative treatment for arterial aneurysm which is most likely to be successful is the application of an operative method which is a direct attack upon the aneurysm, preferably with complete extirpation of the aneurysmal tumor. This method of treatment is not associated with any particular difficulties for a surgeon who is gifted with average skill and who has an appreciation of the conditions of the circulation peculiar to aneurysm.

THE HAZARDS OF SURGERY IN OBSTETRICS*

Percy W. Toombs, M.D., Memphis

During the past two or three years medical literature has produced a number of articles relating to the integrity of the Cesarean scar under the strain of subsequent pregnancy, and the truth or falsity of the gynecological proverb: Once a Cesarean, always a Cesarean. While those articles were interesting intrinsically, they were also highly suggestive of a trend which has been increasingly evident in the obstetrical practice witnessed in this country since the beginning of the Twentieth Century. The Cesarean scar is being encountered so frequently as to be one of the regular problems presented to the already over-burdened obstetrician, making the care of the multipara as full of hazards and uncertainties as are present when the patient is about to assume motherhood for the first time.

Nor is the Cesarean the only operation which has steadily gained in popularity and frequency. Turning again to recent medical publications, we find that all sorts of operative intervention has been employed with increasing confidence and unconcern, and we see earnest advice offered to prospective mothers, especially primiparae, to enter hospitals for confinement rather than await delivery at home, so in case any operation is necessary, "everything will be at hand." It is far from my purpose to criticize maternity hospitals, or to intimate that the employment of surgery has been made more common because patients make use of them. It is the fact that the possibility of surgery is at present taken so much for granted which I wish to emphasize.

Some twenty years ago Arthur Stein of New York published a paper with a title similar to that which I have chosen for my remarks here today. It was called, "The Operative Tendencies in Modern Obstetrics." He began by lamenting that obstetrics had failed to make the advances in surgical practice which had been witnessed in nearly every other branch of medical work since the introduction of anesthesia, aseptic technique and other modern conceptions. He continued by mentioning and describing the advances which had been made —mechanical dilatation of the cervix, vaginal Cesarean section, symphysiotomy and pubiotomy being chief among them. His main argument, however, was in favor of employing vaginal section according to the technique of Duhrssen in all cases where labor seemed likely to be difficult, and he concluded by saying that after all, in view of the increasing popularity of this form of artificial delivery, obstetrics could not be accused of failing to keep pace with the advances in other branches of medicine.

Were it possible to obtain a consensus of opinion in regard to such a matter, which I am quite sure it is not, I strongly suspect that Stein's views would now be regarded as "old-fashioned." Today the pendulum has begun to swing the other way, and those who are in the best position to speak with authority are advocating not more surgery but less. But the years which have elapsed between Stein's paper and this one have witnessed a steady rise in the percentage of obstetric cases in which resort was had to surgery, and if today, the physician is beginning to realize the dangers and penalties of such a course, his patient and her relations are more than ever eager to have him resort to artificial aids in the conduct—and more than all—the *termination* of labor.

It is here, I believe, that the crux of the whole matter is to be found. If Cesarean section is being performed upon slight indications—or none at all—it is because of an insistent public demand for it, and behind this is a social and economic urge arising from numerous and varied stimuli. In England there appears to be more than a suspicion that the matter of fees is by no means unconnected with the desire to hasten labor. Shaw, of Manchester, puts it this way: "In the minds of the laity labor is a natural function—if it ends successfully it is no credit to the doctor or the nurse; if anything goes wrong then the attendants must be to blame. A practical outcome of this is the very small remuneration paid for attendance upon a maternity case. A doctor may be up one or two whole nights, may completely dislocate the whole work of his practice for some days, during which time he is worn out with anxiety for this patient and the others he is neglecting, and yet, when all is over he receives in remuneration less than he would for removing tonsils or any minor operation, and in credit very little . . . beyond what is due to his pleasant and sympathetic manner, as he has only been observing a normal function. . . . Until the general public realizes the skill and patience necessary for the conduct of the simpliest labor—increased an hundredfold in cases of delay and difficulty—and is prepared to pay fees commensurate with the time and anxiety involved, so long will the temptation remain to hasten delivery by every available means."

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*Read before the Tennessee State Medical Association, Memphis, April 12, 13, 14, 1932.

If one is to judge by much that has appeared in lay publications in this country during the last few years, with us the shoe is on the other foot. Even the staid and conservative *Atlantic Monthly* surprised us a few years ago by publishing a lament concerning "The High Cost of Babies" followed by an avalanche of correspondence both for and against the views set forth therein. The opponents of "birth control" pointed out that the fearful fees demanded by obstetricians were the chief stimulus to the frantic efforts being made by those upon whom was imposed the burden of producing the next generation, to ease their shoulders of this incumbrance. This agitation in turn brought to light the fact that the specializing obstetrician was able to set so high a price upon his services because he was in effect a *rara avis*. Fewer men were taking up obstetrics as a specialty because it involved exertion by no means commensurate with the financial return to be expected from equal exertion in other branches of medical practice. Added to this was the mournful news that older general practitioners everywhere were becoming increasingly unanimous in their refusal to take confinement cases at all. "Let the young fellows do it," was the common rejoinder. "I need my night's rest." Despite this attitude on the part of the medical profession, and the ardent propaganda of the "birth control" advocates, it is noticeable that gestation and labor have not ceased to be "endemic" throughout the civilized world. In this country paterfamilias grumbles but he pays, yet he shows a growing tendency to desire to have something for his money. Like his English cousin he sees no reason why he should have to write such generous checks when the doctor has done nothing except sit by the bedside uttering cheering platitudes while wife does all the work herself. But if his nostrils have been assailed by the horror-suggesting fumes of anesthetics, if he has been solemnly consulted as to whether he will give his consent to "laparotomy through the upper segment" or "low cervical section, if in the best judgment of the consultant it should be found necessary," if he catches the glitter of ominously suggestive instruments of unknown purpose, bubbling merrily in the sterilizer —then he will be prepared to pay the final costs cheerfully, even if he has to mortgage the house or borrow on his life insurance. Have not most of his married friends been placed in a similar predicament?

There is nothing new about the desire on the part of the parturient woman to have pain abolished and labor shortened. It is doubtless as old as womankind. When Kronig and Gauss suggested using morphine and scopolamine to cloud the mind of the woman in travail so that later she would forget all about it, and have no fear of future pregnancies, they were not putting forward anything strictly original. The furore concerning "twilight sleep" which ensued was merely a feature of a general social trend in regard to the position of women morally and economically which was going on everywhere. The World War did much to stimulate and hasten the progress of this movement, but it is not an outcome of the war. The Kaiser was not half so responsible for it as were Campbell and Heinz who sent women out to earn the money whereby to purchase the soup and pickles once made at home. No way has yet been worked out by which babies may be manufactured and sold cheaper and better than those produced by old-fashioned methods, but in such "short-cuts" as twilight sleep and Cesarean section a way seemed open whereby considerable improvement could be brought about. That the obstetrician should yield to the importunities of his patients is not very surprising; elective Cesarean seems a rather safe procedure, and even that done without previous arrangement offers a comparatively easy way to avoid a long and tedious "confinement case." Alternatives to these procedures were also freely offered—Potter version for example. All of these maneuvers, we were told, shortened and reduced its hazards both for mother and child.

The figures for Cesarean section rose and rose, and those who compiled them pointed out that the incidence of craniotomy and other operations fatal to the fetus was steadily diminishing. This sounded very satisfactory. But—and it is a very large *but*—today, in this country, the maternal mortality and morbidity is higher than in any other country on earth, and since records of maternal deaths have been systematically kept is greater than ever before. This hardly indicates that the final results of the obstetrician's work have been improved by resort to surgery.

The medical profession is certainly alive to the grave condition which these figures reveal; there is considerable indication also that the laity is becoming increasingly conscious that the next generation is being produced at a fearful cost to the women of this one. We learn that during the nineteen months the United States was at war almost as many women died in producing citizens to enjoy the benefits of democracy, as soldiers who gave their lives to make the world safe for it. Science bends every energy to make war more terrible and deadly as time passes. Would it not be well to be equally diligent in attempting to render the maintenance of the population a trifle less hazardous and fatal?

Most of the figures in regard to puerperal mortality and morbidity are compiled at lying-in hospitals, although the government compilations present the returns in vital statistics of the population at large. It should not be forgotten that the maternity hospital is a dumping-ground for all desperate cases, for to it are sent all the failures and mistakes of midwives and physicians in private practice. Therefore, it is not surprising that their record of death and disablement after obstetric surgery is a black one; it could hardly be otherwise. But when we leave the walls of the maternity hospital behind us, we do not witness any great improvement. Bland, in a recent paper of much merit cites a study made of maternal deaths in Massachusetts during the years 1922 and 1923, in which he says: "This study shows that preventable disease was responsible for 58 per cent of the deaths, and still more impressive, that operative delivery of some sort was employed in 591, or in more than 50 per cent of the 984 deaths recorded. The mortality from Cesarean section in the cases recorded was 88 per thousand. Of the 100 deaths following abdominal delivery which formed the subject of a special study, 30 per cent were caused by septicemia. Throughout the world the mortality figures from operative delivery are somewhat similar. The death rate in Norway from surgical interference is recorded as 12.9 as compared with an average mortality from puerperal causes of only 2.9 per thousand live births."

The advocates of surgery may report that these figures represent the desperate cases; that these women would inevitably have died undelivered without surgical interference, and by offering it, their attendants gave them their sole chance of survival. If a single mother was saved under the existing conditions surgical interference is fully justified. Any fair-minded person must admit that this argument is a sound one, but it brings me to a point I wish especially to emphasize, one which I do not believe has impressed many of those who are earnestly striving to lower our fearful maternal death rate. The improvement in all kinds of surgical technique has given added assurance to all members of the medical profession, whether or not they are themselves directly concerned with surgery. Because it is realized that difficult obstetric cases can be handled by surgical methods when those ordinarily employed prove inadequate, the average physician is less careful about prenatal examination and care. This attitude has penetrated into the lower social strata, where most of the maternity work is done by midwives and the surroundings of the patients are such as to render them peculiarly susceptible to the factors responsible for high maternal mortality. In large cities where maternity hospitals are numerous there tends to be a false sense of security; if anything "goes wrong" help can easily be procured. This is why so many cases of dystocia, subjected to repeated examinations and otherwise thoroughly infected, are sent into the large institutions for emergency Cesareans, which in the majority of cases prove fatal.

The outcome of such operative interference should not properly be charged against the surgeons, but against those midwives, physicians and the general public who permit the conditions to exist which combine to demand it. A very illuminating discussion on "failed forceps cases" took place at a recent meeting of the British Medical Association. The remarks of James Hendry, professor of obstetrics at Glasgow University, have a direct bearing upon this point. In studying a series of 558 cases sent into hospitals because of failure to deliver by forceps, he noted that in 151 no abnormality of fetal or maternal parts existed—the forceps had been applied before the cervix was fully dilated. It was not that the presentation made delivery difficult or impossible, it was merely that labor was proving too slow. "We must agree," he says, "that the application of forceps before complete dilatation of the cervix is a most dangerous procedure; yet we see how often it appears to have been practiced. Efficient antenatal care should identify the cases where labor is likely to be protracted and dilatation slow, but it is only effective teaching which can prevent the too early application of forceps in normal cases. . . In estimating how far the cases of 'failed forceps' could have been prevented by efficient antenatal care, I have tried to show that almost all of the real abnormalities could have been identified during the course of pregnancy, and particularly in the last month. There is only a very small group of fetal abnormalities of the developmental type which cannot be detected before the onset of labor. Antenatal supervision, however, cannot prevent the too early application of forceps in normal cases."

All speakers at the British meeting deplored the inefficient and insufficient training in obstetrics received by medical students and hospital internes. I believe that the same complaint is justified in this country. The constantly increasing tendency to resort to specialties upon the slightest provocation is in obstetrics as elsewhere, and this is one factor accounting for the increase of surgical operations upon parturient women. It is perhaps, one of the indications of the decline and disappearance of the "old family doctor," concerning which much sentimentalizing has been done. Is he being cast into the discard along with home-made soup and pickles, and for the same reason? Obstetrics as a specialty does not appeal to the young man starting out in practice, for reasons I have already touched upon. The great bulk of maternity work falls into the hands of those who have no special liking or aptitude for it, and will stop it just as soon as they are able to "pass the buck" to someone else. If a job is bungled through ignorance or carelessness, a prompt resort to surgery may give a brilliant finale to a slow and sorry affair. This is not the universal situation; not even the usual one, but I do think much of the high maternal mortality and morbidity which is shocking us at present may be traced back to such an attitude. The remedy lies in more thorough and extensive training in antepartum care and the management of labor—normal and otherwise; in intelligent advice by the established physician to his patients, not only pregnant and parturient women but all those interested in the rearing of families and the preservation of motherhood. If the medical profession as a whole makes a determined stand for better obstetrics all along the line, I believe the question of too much surgical interference will take care of itself. The obstacles with which it has to contend are doubtless greater than ever before, but on the other hand, we are now armed with a hundred safeguards which our professional forebears did not have. There is much food for thought in the question asked by a reader of the *American Journal of Obstetrics and Gynecology* a year ago: "Can you give me the general attitude of the medical profession regarding Cesarean section? Would one be justified in doing a Cesarean because the woman preferred it to labor?"—and the answer by John Osborn Polak :" Primarily, section is done in the interest of the child, always accepting the fact that the woman's risk is increased by section in all relative indications; hence it should not only be a stretch of the physician's conscience, but a stretch of his veracity and his honesty to his patient to advise section versus normal labor, just because this is the easiest way to get the baby out without pain."

DISCUSSION

DR. J. R. REINBERGER (Memphis): I have certainly enjoyed this excellent treatise dealing with the conservative management of labor. I am thoroughly in accord with its contents. Maternal mortality statistics has always been a hobby of mine, and in 1928 I completed a study of Memphis deliveries for six years, showing the trend towards better obstetric care. The graph showed, without doubt, that the patients were seeking better surroundings for the delivery of their babies for the hospital deliveries showed a definite increase. Likewise, that the midwives were being substituted for by well trained physicians. Unfortunately the actual outcome of these pregnancies did not show a very marked improvement, therefore it was evident that increased hospitalization had not solved the problem. A detailed study of those patients attending the University Prenatal Clinic with subsequent delivery and follow-up showed a decided lowering in the morbidity and mortality. A contrast in those cases delivered upon our service showed that the danger was sixteen times as great in 1930 for those patients not having prenatal supervision and proper conduct of labor against those admitted to our service in actual labor. Further study revealed that the incidence of eclampsia had been lessened and that there were less complicated and difficult labors. Puerperal infections had not been entirely overcome, but there was a decided change for the better.

The stillbirth problem with its continued high mortality is and will always be a difficult problem. Recently Dr. LePorte of Albany completed a very interesting study in an attempt to find out why the stillbirth rate still persisted as it has for many years. The usual etiological factors did clarify the situation. The hour of delivery was studied as a possible contributory factor and it was found that the largest number of live births occurred in the morning between 3 and 5 a. m., and that the greatest number of stillbirths occurred in the early afternoon between 3 and 5 p. m. and late evenings. This led him to believe that the demand of physicians to attend office hours and the necessity of getting rest might urge a termination of labor resulting in a higher fetal mortality. Following up this line of thought and in discussing a paper on "Analgesia in Labor," I expressed the belief that the figures reported by Dr. LePorte certainly deserved consideration. If patients were given the proper analgesia the labors would not be terminated so rapidly thereby delaying operative interferences which in turn would undoubtedly lessen the number of birth traumas. The effect of long and difficult labors upon the fetus has always promoted a great deal of discussion. Several papers have been written concerning the effect of long labor on the fetus. Some believing that brain injury or hemorrhage nearly always resulted, while others felt that with the proper conduct of labor that the outcome was always better. At present we are studying all cases in labor extending over 24 hours to determine not only the effect upon the fetus, but also upon the mother, and to date with the proper conduct by giving sufficient analgesia, forcing fluids and proper nourishment that there has been very little damage to the mother and no apparent damage to the fetus. It does seem that even under ideal conditions that there is a slight tendency towards an increased morbidity.

In closing, I want to thank the essayist for this most interesting paper and feel sure that it will do much towards stimulating more interest in the conservative management of normal labor. By doing this both the fetal and maternal mortality will be reduced. It cannot be denied that this phase has been neglected in that operative and spectacular obstetrics at present holds the attention and enthusiasm of the undergraduate. Therefore, medical instructors should spend infinitely more time in demonstrating and conducting normal labors and that the internes should be disciplined to adhere closely towards this dictum and that the operative termination of labor should be carried out only when advised by the trained consultant. This will make it evident to the man in the future who will conduct most of the labors, feel that intelligent waiting rather than watchful waiting is paramount and that operative interference is not without danger.

DR. P. W. TOOMBS (Closing): My purpose in presenting this paper was to arouse in you an interest in assisting those of us who are particularly interested in lowering the frightful maternal mortality and morbidity in this country. It can be done solely by what I choose to call the obstetric conscience. If we are conservative, careful and aseptic in the care of our cases, and give nature a chance, I am of the opinion that the mortality and morbidity which now is so frightfully and distressingly high will be materially lowered.

I thank you for your kindly discussion.

ELECTRICAL INJURIES*

J. A. McCulloch, M.D., Maryville

DUE to the increasing use of electricity in the factories, railroads and households of this country, there is a natural increase in the number of accidents from electricity.

It may be said that the use of electricity is yet in its infancy, and each day witnesses some new use for this form of energy, both in the home and in the field of commerce and manufacture. Electric lines and circuits have been spreading and multiplying, and voltage has been rising. In fact, electricity is now recognized as the ideal energy for almost every purpose.

Along with this increased use of electricity, its attendant dangers have been recognized to such an extent that safety devices and special instructions are given to those who come in contact with the electric current in the many factories over the country in order that these hazards may be eliminated as far as possible. Exercise in artificial respiration methods have greatly reduced the number of fatal accidents from this source, yet there is an apparent lack of information among the public on such subjects. The great power companies have and are certainly doing their part toward offering all protection possible, so that it may be stated that most of this class of accidents are due to carelessness.

Injuries sustained from electricity are usually due to exposure to electric flashes or actual contact with an electric current, and the injuries are either shocks or burns.

Contact with electricity, either directly or indirectly, may cause any of the following conditions:

1. Electric shock, where the patient is electrified to a point where there is suspended animation and an arrest of respiratory effort.
2. Electric burns of either the first, second or third degree.
3. Electric flashes or glare injury to the eyes.
4. There may be certain associated injuries, traumatic in character, such as wounds or fracture from a fall.
5. Complications in the form of paralysis, which may be organic or functional in character.
6. Certain sequelæ of electrical injuries are seen at times, these being scars, deformities, certain psychoses, neuroses, neurasthenia, melancholia.
7. Death.

There are certain factors which may be used for the purpose of determining the extent of an electrical injury. These are as follows:

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*Read before the Railway Surgical Section of the Tennessee State Medical Association, Memphis, April 12, 13, 14, 1932.

Voltage, whether high or low tension.

Amperage.

Duration of contact.

Path of current.

Application of contacts.

Type of current, whether direct or alternating.

Condition of the individual susceptibility of the patient at the moment of contact.

As to the voltage, it may be said that some authorities claim that death from low voltage current is due to ventricular fibrillation, and from high voltage to paralysis of the respiratory center. The widespread opinion that low tension currents are not dangerous has cost many lives. Attention is called to a number of deaths from the 120-volt lighting circuit, and accidents from currents of even lower voltage have been known to have been fatal.

The amperage is the true measure of the intensity of the current.

The duration of the contact is one of the most important considerations in electrical injuries.

The degree of injury may be stated to be more or less proportionate to a combination of amperage and voltage, and the duration of the contact.

Individual susceptibility plays a great part in this class of cases. It is a well-known fact that death has occurred from contact with 110 volts. On the reverse there are cases on record where the patient has come in contact with 15,000 volts and has lived to tell the tale.

The individual emotions of certain patients play an important part at times. An instance has been cited where a lineman was reported to have died purely of fright on touching a high-voltage line which was not charged at all. Another interesting phenomenon may occur under certain circumstances. It is a known fact that a long-distance high-tension line which has been disconnected from its source of supply of power has been known to build up a high static voltage, due to the action of the atmosphere, even in dry weather.

In regard to the unusual occurrences noted in connection with an electric current, a case has been reported where on a certain occasion a man going to the rescue of another man who had been rendered unconscious as a result of an electric shock, that his rescuer received a discharge from the man's body, notwithstanding that it was free from the circuit which gave the shock. This rather unusual circumstance has been explained on the theory that the ground, wood, cement or brick floor on which the body of the patient was lying was too dry to carry off the high static charge which it had received, and that the rescuer experienced a rather heavy electrical kick.

Generally speaking, it is a well-known fact that the higher the voltage involved the greater will be the current through the body. Also the longer the duration of the contact and the larger the number of points the greater the danger of life. Yet it is also known that the human body is a rather poor conductor, and that its high resistance greatly reduces the amperage of the current. That is the probable explanation of the fact that so many individuals recover from contact with a heavily loaded electric line, it being explained on the ground that it is generally a shunted current that the man receives, a mere leakage from the line, from which he will often recover, if properly ressucitated.

Another well-known phenomenon of an electrical injury is that in many cases of accidental electrocution there is no evidence of a burn. This fact has been noted in fatal cases of electrocution by lightning.

The calloused palms of the working man offer the highest electrical resistance, this being explained on the ground that this thickened epidermis containing no blood nor lymph is a poor conductor.

In an electric shock the location of and the number of contacts is an important factor, as well as the duration of the contact. A small current applied over the pneumogastric nerve in the neck will paralyze the heart, whereas if taken through the hands or body the path must be over the nervous mechanism controlling the respiratory or cardiac centers to produce death. The argument has been produced that the electric current follows the blood vessels, and not the nerve trunks. Oil is a non-conductor. The nerve trunks are chiefly fat. On the other hand, the saline constituents of the blood make it a good conductor.

It is a well-known fact that certain persons have an idiosyncrasy for an electric current, just as they may have for certain drugs. In other words, it is a peculiarity that has never been accounted for that a quantity of electric current that would give serious shock to one person would produce merely a tingling sensation in another. An eminent authority has stated that the various internal and individual circumstances that influence the extent of an electrical injury may be grouped as follows:

1. Internally. (a) Voltage, (b) amperage, (3) number of poles of contact, (d) time limit of contact, (e) kind of current, A. C. or D. C.
2. Individual. (a) Resistance of skin and body, (b) path of the current through the body or over the surface of the skin, (c) the condition of the mind and body.

In connection with a discussion of electricity and its effects on the human body, it may be interesting to consider some notes which have been made with penal executions by electricity or electrocution. In this mode of execution the methods that are usually adopted include that of strapping the criminal to the chair in such a manner that the electric current will come as directly in contact with his body as possible. Contact is made with a high potential, 1,800 volts, for five to seven seconds, reduced to 250 volts until half a minute has elapsed, raised again to high voltage for three to five seconds, and the current is again reduced to low voltage until one minute has elapsed. It is again raised to a high voltage for a few seconds, and the contact is then broken. The ammeter shows that from seven to ten amperes have passed through the criminal's body. At the moment the contact is made the criminal's body stiffens to a state of tonic muscular spasms, restrained by the straps. This spasm abates somewhat as the voltage is reduced to again regain its maximum with each rise of voltage. When the current is interrupted, the body collapses completely.

Some interesting features are revealed from a postmortem of electrocuted criminals. The temperature rises promptly and reaches as high as 120 F. within twenty minutes in many cases. This rise of temperature has been explained as being due to the active metabolism of tissues not dead within the body where all vital mechanism has been abolished, there being no circulation to carry off the heat. It has been estimated that as much as ten to twenty horse power has been released with this form of electrocution, and has been sent into the criminal's body.

One theory of electric shock is that in suspended animation or cessation of the respiration and cardiac action from electrical overstimulation, that the brain loses its power to react to stimuli. This power to react is only temporarily suspended, so that life if not entirely extinct is dependent on artificial respiration until such time as the brain recovers its irritability. This action of the brain or the lack of action of the brain has been likened to the dry battery, such as is used in the doorbell, which if used too long or too continuously exhausts the battery, and the bell ceases to ring. In other words, there is overstimulation to the point of exhaustion, and the brain simply suspends action or vital operation. The dry battery left to itself recovers, and the bell will ring again. The brain possesses infinitely greater power of recovery. However, under the extreme conditions or circumstances resulting from electric shock, artificial respiration to supply oxygen is resorted to, so that oxygenated blood may help to sustain the heart action, else there will be no interval of rest allowed the exhausted brain in which to recover.

A second theory is that of asphyxiation or the non-oxygenation of the blood. The current that induces the electrical shock produces a heightened chemical activity or an electrolysis, and a great deal of carbon dioxide and other toxic products are produced. This excess of carbon dioxide in the blood paralyzes the respiratory center in the brain, producing an asphyxia. Again artificial respiration is required, and must be continued until the blood is oxygenated before normal respiratory efforts are established.

A third theory of electric shock is that the electrical current causes a sudden dilitation of the great vessels of the abdominal viscera. These blood vessels are held in a state of tonic constriction by the nerves of the sympathetic nervous system. As a result of the electrical shock, this tonic constriction of these vessels is suddenly relaxed, and these vessels dilate to twice their normal size, and are able to hold four times the quantity of blood they normally contain. Thus the man in shock is liable to die of hemorrhage into his own blood vessels. In other words, he can die of hemorrhage in this state without shedding a drop of blood. Since the brain depends for its blood tension on the tonicity of the blood vessels, the brain will be without blood, and there will result an anæmia of the brain. Also the heart will have no blood to send into the arteries, and again unless artificial respiration is resorted to the asphyxia is increased and death results.

Patients suffering from electric shock may remain in an unconscious state for variable lengths of time. Inasmuch as this is always a serious condition, it is absolutely imperative that no time be lost in applying artificial respiration in this class of cases. It has long since been proven that the only measure holding any hope for these cases is artificial respiration. Every person working in a shop or a factory where electricity is used to any great extent should by all means have a fundamental knowledge of at least one reliable method of applying artificial respiration, as it often occurs that a layman who has this knowledge may save a life, while those not so trained must necessarily sit by and see the patient die without knowing what to do while waiting for some one to arrive who does have this knowledge.

It has been estimated that about ninety per cent of accidents from electricity are burns and not from shock. These burns may be divided into three classes:

First. Burns caused by the intense heat generated by short-circuiting, which are the so-called flash burns.

Second. Burns due to direct contact with the conductor.

Third. Clothing burns, caused by the ignition of the clothing of the patient.

Flash burns are usually observed in the eyes of the patient, and may not be very evident for several hours after the receipt of the injury. At this time a very painful inflammatory condition may be noted in the eyes, necessitating special attention, both to relieve the pain and to conserve the sight.

In a consideration of burns from electricity it may be stated that their treatment does not differ materially from similar burns from other causes. It should be stated, however, that the prognosis as to the outcome of this class of cases should be very guarded. It should also be stated that the severity of this class of burns is at first usually underestimated, as is the duration of the time required for the healing of this class of burns. Some authorities claim that they take from two to three times the healing time of the ordinary burn. It is, therefore, advisable to be conservative in any surgical interference before one is able to estimate the limits of the injury.

CANCER OF THE ORBIT*

J. W. DANLEY, M.D., Lawrenceburg

THE name cancer by old lexicographers meant a malignant tumor made up chiefly of epithelial cells. The modern interpretation is any malignant tumor. Therefore, in this paper we shall include sarcoma.

1st. We will first consider sarcomas of the orbit. Primarily they are the most common malignant tumors of the orbit. Some writers estimate 1-1500 of all affections are sarcoma. They may arise from any part of the orbit, and may invade the orbit secondarily from surrounding accessory sinuses. All types of sarcoma are found to arise and invade the orbit. As a rule, they are of rapid growth, depending, of course, whether they are incapsulated, these without capsules growing more rapid. We know practically nothing as to the etiology. Heredity seems to play no part; in some cases there is a history of an injury. Young individuals seem more susceptible, but may occur at any age. Early symptoms depend on location. If near the optic nerve, blindness and pain are early symptoms, followed by exopthalmus. When located away from optic nerve, the first symptom usually is a deficiency in globe movements in the direction of the tumor. Pain is a prominent symptom in all advanced cases.

How diagnosed? I know of no way to diagnose early primary sarcoma of the orbit without removal. We may be able to say that a tumor is present; if so, it should be dealt with radically, as early destruction is the only hope of saving the patient's life. Secondary sarcoma naturally is diagnosed much earlier because of the fact that it has already been found in adjacent structures.

2nd. Primary carcinoma is rarely seen in the orbit, and when so is found springing from the lachrymal gland. Secondarily it may invade the orbit from any adjacent epithelial structures. Carcinoma of the orbit, as in other portions of the body, is a disease rarely seen in childhood, but occurs more frequently after middle life. Etiology of this form of cancer is as obscure as in sarcoma. Carcinoma of the orbit is usually of slow growth except when arising in the lachrymal gland. Primary carcinoma, as in sarcoma of the orbit, is rarely diagnosed early.

As I wish to report five cases that have come under my observation, I will not go further into the symptoms and other means of diagnosis of cancer of the orbit, as it would make this paper too long.

Case 1.—White male, three years of age. Family history negative. Had never been sick except occasional cold. Well developed and nourished. Mouth, nose and ears normal. Mother noticed about three weeks before coming to my office that left eye seemed larger than right. On covering right eye, child could not see to pick up things. On examination there was marked monolateral exopthalmy. Accommodation normal. Pupils equal. Sclera, conjunctiva and lids normal. Homatropin instilled and eye examined with opthalmiscope. No opacities of lense or vitreous. Retina pale and vessels faintly seen. Up to this time child had not shown any evidence of pain. Diagnosis: Orbital tumor. Enucliation advised at once, which was refused. Child was returned in six weeks. Exopthalmia had increased so much that the lids could not close over the eyeball. There was evidence of constant and great pain. Parents agreed to operation. Eye was enucliated, and a tumor the size of a large grain of corn was found attached to orbit and optic nerve external to optic foramen. Complete exterpation of orbital contents was done, with complete healing in three weeks. Child was returned at the end of four months. On examination a granular pussy bleeding mass was found to fill the orbital cavity. Parents refused further surgery. It was reported that the child died about six weeks later.

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*Read before the Eye, Ear, Nose and Throat Section of the Tennessee State Medical Association, Memphis, April 12, 13, 14, 1932.

Case 2.—White female, age 4 years. Family history: Mother died of cancer of the stomach about two years before. Father living and in good health, but had cancer of the mouth about one year previous that disappeared on X-ray radiation. Child poorly developed and nourished; throat and nose normal. Father noticed about a month before that the left eye was larger than the right. Child had been suffering with great pain for three or four days. On examination there was marked exopthalmia. Conjunctival vessels congested. Pupil would not react to light. Little or no accommodation. Diagnosis: Orbital tumor. Advised enucliation. On operation, a tumor about the size of a cherry was found attached to periosteum. Sclera and optic nerve external to optic foramen. Complete exterpation was done, followed by X-ray radiation. Wound healed in fifteen days. Child was seen again at the end of two months, and a tumor about the size of a grain of corn, granular and bleeding, was seen external to optic foramen. Operation was done. Tumor was removed and the base cauterized with electric cautery, followed by X-ray radiation. Wound healed, but child became pale, emaciated and complete paralysis, and died at the end of eight months.

Case 3.—1928. White female, age 50 years. Fairly developed and nourished. Family history negative. History noticed a small growth on right eye about six months before coming to my office, which had grown gradually, but recently noticed that could not move eyeball normally. Complained of diplopia. On inspection, found a growth cystic, broad base and fixed to eyeball and floor of right orbit. Diagnosis: Epithelioma. Operation was advised. The eye was enucliated with the tumor, and the base treated by electric coagulation, followed with X-ray radiation. Wound healed in about three weeks. At present there is no evidence of return.

Case 4.—1927. White male, age 60. Family history negative. History of epithelioma of right ear about two years previous that disappeared on X-ray radiation. Noticed a bump on eyeball for about one year, not painful, but gradually grew larger. On inspection, a growth about the size of a grain of corn was seen on conjunctiva of left eyeball on temporal side. On palpation it seemed to extend into orbit. Diagnosis: Epithelioma, and advised enucliation. On operation, tumor was found attached to sclera and periosteum of floor of orbit. Complete exterpation was done. Electric coagulation of the floor, followed by X-ray radiation. Wound healed in about two months, with no return of growth at this time.

Case 5.—1914. White male, 60 years of age. Family history negative. History had what he thought was cancer of lower right eyelid, which was treated by an irregular by applying a plaster. Wound sloughed, followed by healing about four months, but eyesight was lost, and suffered great pain. On inspection, a granular mass was seen underneath right lower lid, which was inverted from extensive scar tissue. Pupil dilated, and would not react to light. Aquæous chamber shallow. Marked increase of tension of eyeball. Lens opake, of a greenish color. Diagnosis: Carcinoma with glaucoma. Operation advised. Enucliation with complete exterpation. Wound healed in about three weeks. Patient seemed well for about two years. Noticed a discharge for about three months, which had a foul odor. On examination, a granular mass was seen in floor of orbit, with bloody pus. Advised further surgery, which was refused. His death was reported about six months later.

We come now to the most important phase of the subject. Treatment: Knowing that we are dealing with a life destroyer, and in spite of our most heroic treatment, we lose life. We should not consider saving sight at the expense of life, but use the best method for saving same. Surgery radium, X-ray radiation, cautery and electric coagulation are all of value. There seems to be difference of opinion of surgeons and radiologists. Some believe that surgery alone is the best, while others believe alone in radiation. The majority advise complete exterpation of the orbital contents, combined with cautery or electro-coagulation and X-ray or radium radiation. I have tried all methods except radium radiation, with disappointment. However, I cannot see any advantage radium could have over X-ray radiation.

DISCUSSION

KATE SAVAGE ZERFOSS: The report of these five cases impresses one that the obligation of cancer education is imposed on the opthalmologist as well as the internist and surgeon. As one of the chief sources of malignant tumors of the orbit is by direct extension, these cases call attention to the fact that early recognition and management of the primary condition is the only means of preventing loss of tissue and function of adjacent structures. Had three of these individuals reported when the epitheliomas were first observed, they probably could have preserved, not only the eye, but useful vision and in one case life.

It is believed that there is a noticeable reduction in the number of cases presenting metastatic involvement of the orbit. Bloodgood states that the cancers are relatively smaller in size when they are observed for the first time in the clinic than they were in former years. For a classification and description of tumors of the orbit we are indebted to Collins and Mayou and Friedenwald. The latter's contribution to the literature cites that neuroepitheliomas have been primary in the orbit with the retina negative, the origin being in the ciliary ganglion. He also states in the pathological description of sarcoma of the orbit that a valuable point of differential diagnosis is made between the small, round-cell sarcoma and the lymphosarcoma in the finding of a blood picture of leucemia in the latter. This is not constant, as the orbital tumors may antedate the typical blood picture. Fuchs has indicated that in the primary tumors of the optic nerve that vision is lost early, the muscle motility is interfered with relatively late, and lateral displacement of the eye is rare compared to that caused by the malignant growths in other sites.

In observing a case we must decide the procedure to be instituted. This is based on such signs as the extent of the exopthalmos, muscular impairment, especially lateral displacement of the eye, blindness, etc. An X-ray examination of the orbit and skull often gives additional information as to the source, size and extent of the invasion. This is especially true in the new growths arising in the nasal accessory sinuses, sarcoma originating in the bones of the orbital wall, carcinoma of the pituitary gland extending into the orbit. The additional tumors from the cranial cavity as the endothelioma and meningeal sarcoma are not to be visualized in this way.

As a treatment, we have not only X-ray, radium and exenteration, but diathermy and fulgeration of selected cases, especially the conjunctival pigmented melanoma. Cary advocates liagation of branches of external carotid for the treatment of sarcoma. This he terms the starvation method. One method now used for a radical operation is to have X-ray radiation just prior to the exenteration, radium implanted in the wound and deep X-ray therapy in six weeks.

A paper such as has been presented by the essayist is a stimulus to increased interest and effort in cancer control.

CANCER OF LARYNX*

REPORT OF CASE, WITH LANTERN SLIDES

H. W. QUALLS, M.D., F.A.C.S., Memphis

THE literature which has already accumulated in regard to cancer of larynx is so vast and the claims made as to the importance of different surgical procedures are so far-reaching that anything in the nature of a close criticism of the matter, having regard to brevity, is impossible. If by reviewing with you some of the salient facts in regard to signs, symptoms and treatment I may be able to arouse and renew your interest in patients suffering with this disease, I shall feel that I have not tried in vain.

About 5 per cent of all malignancies occur in the larynx. Of these, 98 per cent are carcinomas and 2 per cent sarcomas. Since the two conditions are indistinguishable clinically, I shall consider them together.

Etiology.—Here I may mention some predisposing factors, such as heredity, excessive voice use, abuse of alcohol or tobacco, and others without sufficient justification. Of the origin of cancer, nothing positive is known. Cancer of the larynx is rarely encountered below the age of 40, and most commonly between 50 and 60. It may occur in old age, and men are more liable to it than women. However, the few cases that have been reported in early life have been encountered more frequently in females. Based on the location and on the extent of the disease, it was proposed by Krishober to classify laryngeal cancers into intrinsic, extrinsic, and mixed.

The intrinsic arises from the vocal cords, the ventricles, the ventricular bands, the interarytenoid region, and the subglottic area.

The intrinsic grows from the epiglottis, arytenoids, ary-epiglottic folds, the piriform sinuses, and the pharyngeal surface of the cricoid cartillage.

The mixed is a combination of extrinsic and intrinsic, in which class must be placed a large number of cases which present themselves only in advanced stages.

Extrinsic cancer is a "dire disease." In it the glads are affected at an early period. The course of the disease is rapid, and it is seldom checked or cured by operation. Intrinsic cancer, on the other hand, is a much less hopeless form. It spreads slowly, does not infiltrate so rapidly, and in early stages is curable. So long as the disease is limited to the interior of the larynx, it does not affect the lypmphatic glands, and secondary growths are almost unknown. It is a fortunate fact that, according to some statistics, the intrinsic variety would appear to be more frequent.

Symptoms.—Let us remember that any continuous discomfort in the throat, or any hoarseness lasting more than a few weeks in a patient over 40 years of age, should call for a thorough examination by a competent observer. Hoarseness, that is persistent and progressive, is the most general symptom, particularly in intrinsic cases. It is difficult to understand why this evident danger signal is so frequently overlooked by both the patient and the physician. The hoarseness may be out of proportion to the size of the tumor when the latter infiltrates the vocal cord, or if the location of the tumor interferes with the movement of the vocal cords. The patient seldom complains of pain before the disease is well advanced. The intrinsic form (as the disease advances) often produces marked respiratory obstruction, while the extrinsic form is more apt to produce pharyngeal symptoms or interference with deglutition. I shall not present in detail all the symptoms and signs of early and advanced cancer of the larynx, but will confine the remainder of this paper principally to intrinsic cancer, mainly since it is most amenable to treatment. In the first stage of intrinsic cancer there will be only a slight hoarseness, which may last for several weeks before the second stage, when the hoarseness increases or dyspnœa becomes marked. Pain may or may not be present. Still, the patient's general conditions may be excellent.

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*Read before the Eye, Ear, Nose and Throat Section of the Tennessee State Medical Association, Memphis, April 12, 13, 1932.

Examination.—In an early stage of an intrinsic variety, nothing may be visible beyond a persistent congestion with some slight thickening of one cord. Sometimes it will occur as a definite tumor, when it will resemble a benign papillonea, fibroma, or anigoma. Infiltration of the cord may appear irregular, making the condition difficult to distinguish from a tuberculous or syphilitic deposit. When the limited infiltration has a cupped or retracted appearance, it is very suggestive of cancer. When incipient, the growth is well localized and usually appears on the middle third of one cord.

Cancer of the larynx is often confounded with tuberculosis or syphilis, but a careful history will often lead us to the right diagnosis. Most authorities agree that tuberculosis of the larynx is always secondary to tuberculosis of the lung. Tuberculosis of the larynx, as a rule, is confined to its posterior part. It usually begins in the interarytenoid space and on both arytenoids. Ulceration and pain on diglutition is an early symptom.

Syphilis may involve any part of the whole of the larynx. It develops more rapidly, is more diffuse, and more irregular than cancer. The Wassermann test should always be made. However, a positive reaction does not always exclude cancer. MacKenty says: "In the larynx, tuberculosis is a painful disease. Syphilis is an anesthetic disease. Cancer is painful only when ulcerating, and then much less so than tuberculosis. Other laryngeal diseases are not painful."

Under antisyphilitic treatment, syphilis recedes with unmistakable rapidity. If a laryngeal disease fails so to recede, syphilis as an entire cause must be excluded. If expert examination of the lungs fails to disclose latent or active tuberculosis, laryngeal tuberculosis may be excluded. A biopsy may be necessary to confirm the diagnosis of laryngeal cancer. Before this is done, the patient should understand that, in case of a positive report, an operation should follow as soon as possible.

Treatment.—There is only one avenue of escape from cancer of the larynx, and that is radical surgical intervention. Unfortunately, in laryngeal cancer, much must be sacrificed by the patient to attain a cure. Yet when one considers that death from this cause is the most distressing and revolting known to man, the price of immunity is not too great. The plight of a patient following laryngectomy is not so disconsolate and cheerless as is almost universally believed. He usually pursues his life's work with a smile and often with even greater zest than before, since he never forgets that, through what he deems a miracle, he has escaped a horrible end.

According to the literature available, their report of cases would indicate that MacKenty, of New York; the late Lynch, of New Orleans; Thomson, of London; and Hajek, of Vienna, have done decidely more surgery for cancer of the larynx than any other four men. Thomson advocates laryngo-fissure for early intrinsic cancer, and cites in his book and in other medical writings much conclusive proof, including many case reports, that this procedure should be the one of choice. He stated in a recent paper: "In other regions of the body there may be better remedies than surgery can supply. In intrinsic cancer of the larynx, other simpler and surer remedies, no doubt, will one day be discovered; but, at present, there is no better way than surgery and the laryngo-fissure route. By this we can secure results which have not been surpassed in the treatment of cancer in any other internal region of the body." However, MacKenty and Hajek think total laryngectomy is more often indicated for laryngeal cancer. Dr. Lynch also thought total laryngectomy more often indicated.

At the Crile Clinic, radium and X-ray have been used with some success. In the experience of most workers on this disease, radium has been an utter failure. Its false promise is luring many patients beyond the aid of surgical procedure. Intrinsic cancer of the larynx is more amenable to surgical treatment than cancer in any other part of the body.

Report of Case.—Mr. W. C. H., farmer, age 73, was admitted to the Methodist Hospital, May 25, 1928. His chief complaint was hoarseness, difficult breathing, loss of appetite and loss of weight.

Past History.—Has been hoarse for the past ten years. This condition has grown worse the past eight months. He has suffered with dyspnœa the past three months. When I saw him first, he was having great difficulty in breathing and was expectorating a large amount of thick, viscid sputum. He has not had any pain in the region of his larynx, and has not had any pain or difficulty in swallowing. Has last forty pounds in the past eight months. He has had pain in the right chest for the past two weeks, coughed almost constantly, and has expectorated a little blood occasionally. His previous health has been good, and he has been an unusually robust man until present illness began. His father died with cancer of the face.

Physical Examination.—Patient's general appearance indicated that he had lost much weight. His skin was loose and his clavicles and ribs were prominent. Sub-crepitent rales were found in the right chest. His face showed an anxious expression. He was laboring for air, and on account of his hoarseness it was difficult to understand what he said. There was no tenderness over the laryx and no evidence of enlarged glands about the neck.

Examination of the Larynx.—Situated along both vocal cords was seen a dirty grey mass that almost completely filled the glottis. The hypertrophies were about the same size and showed very little evidence of inflammation. They appeared to be bathed in a thick, sticky mucus. The appearance of the growth, and its being bilateral, caused me to think of pachydermia laryngis. However, it should be remembered that pachydermia laryngis is always confined to the posterior extremities of the vocal cords and does not produce dyspnœa.

The growth in this patient involved the full length of both vocal cords, giving them an irregular, fringe-like border, and also producing a very narrow, irregular opening between the cords.

Laboratory examination of his blood and urine was negative. This included a negative blood examination for syphilis.

As a temporary measure to relieve his labored breathing, a local anesthetic was administered, and tracheotomy performed soon after he entered the hospital. Following his tracheotomy, he improved rapidly. He was allowed to leave the hospital on the eighth day, but advised to return in two weeks. He was readmitted to the Methodist Hospital, June 22. He stated that he had gained eleven younds while at home. His general physical condition appeared much better. At this time a Hasslinger directoscope was used and a small part of the growth removed from the larynx and sent to the laboratory.

The following pathological report was made by Dr. W. W. Robinson:

Parenchyma.—Large papillary masses of poorly differentiated, acid-ophilic staining, epthelial cells exhibiting rapid profileration and growth. All are of the spino or squamous cell variety, originating in the epidermis of the larynx, the basement membranes of which are broken down by the invasion of cells. There is an average of one to three mitotic figures to the high-power field, and occasional tumor giant cells. Much necrosis and hyalinization of tumor cells is present, especially about the periphery of the growth where an almost diptheroid membrane is formed, consisting of tumor cells undergoing coagulation necrosis and infiltrated with polymorphonuclears and fibrin deposits. Only occasional groups of lymphocytes of endothelial cells are seen. The growth extends throughout the mucosa.

Stroma.—This is scanty and is conspicuous for the absence of fibro-blastic reaction. The vessels are dilated and injected, and many petechial areas or hemorrhage are noted.

Pathological Diagnosis.—Typical Epidermoid Carcinoma of Larynx, Squamous Cell Variety—Grade III Malignancy.

For three days previous to operation the patient was administered fifteen drops of digitol three times daily. A complete laryngectomy was performed July 9 under a combination of local and general anesthesia. The end of the trachea was anchored forward with three stay sutures of silkworm gut and the skin carefully stitched over the end of trachea with dermal sutures. A rubber tube was passed through the nose and guided into the œsophagus to within 7 or 8 inches of the stomach. All water and food was given through this tube for twenty days following operation.

The hypopharynx was closed with No. 1-20 day catgut. The wound was closed with four silkworm matress sutures. Small rubber tubes and gauze were used for drainage. The patient made a good surgical recovery and left the hospital on the twenty-sixth day following his laryngectomy. The carcinomatous growth was large, and I think should be classified as a border-line case—that is, one between the intrinsic and mixed variety. However, the appearance of the specimen with its distinct line of demarcation would suggest that the malignant growth has been completely removed. It has now been three years and ten months since this man had his larynx removed. I heard from him just a few days ago through his son-in-law. He had a severe attack of influenza in January, 1930, but has completely recovered. He now weighs forty pounds more than he did when he left the hospital. Loss of speech is the serious drawback in total laryngectomy, and turns many patients toward radium and less radical avenues of escape. However, many patients learn to speak with a bucal whisper and can be distinctly heard at close range in a quiet room. After several years, strange to say, some acquire loud speech and can talk over the telephone.

DISCUSSION

DR. D. H. ANTHONY: I was very glad to hear Dr. Qualls read his excellent paper on "Cancer of the Larynx, With a Case Report," before this section, because, as far as I know, there has never been a paper on this subject read before our section, and I think the more we hear of this subject locally and the more cases we see operated on locally will result in the public and the physician having confidence in letting us examine and operate on these cases early. It looks as if Dr. Qualls' case was a cure, as it has been four years since the operation and he has had no signs of metastasis.

I had the pleasure of helping Dr. Qualls with this operation, and also observing the patient after the operation, and this man had very little shock and less discomfort following the operation than you would expect. From the history and observation and the excellent report of the case today I would judge that Dr. Qualls' patient should be classified as a late intrinsic case of cancer of the larynx.

I believe that the very early intrinsic cancer cases should be treated with deep X-ray by some one who is accustomed to treating malignancies of the larynx, and a report of the laryngeal condition should be furnished the roentgenologist often in order that he might judge the amount of X-ray to administer and the intervals between doses. Other cases, whether intrinsic or extrinsic, operative or non-operative, should have thorough X-ray treatments, and the operative cases should have treatments before and after the operation.

I did a laryngectomy eleven months ago on a white man, age 59, who had had continual hoarseness for three years. I first saw him in February, 1931. At that time he had an acute upper respiratory infection, and I was unable to operate on him for three weeks. I did a tracheotomy because he was having some difficulty on breathing. Following this, he developed an acute bronchitis, and I was unable to do a total laryngectomy until May, 1931. The patient did well and was able to leave the hospital at the end of two weeks. Since then he has been getting along very well.

I believe this case should be classified as early extrinsic type at the lower portion of the larynx, as he had apparently a cancerous growth occur under the skin on both sides of the incision just above the trachea opening. He has been getting heavy doses of deep X-ray from Dr. W. S. Lawrence and Dr. Robert Payne for the last six months.

IMPROVEMENTS IN THE ANESTHETIC COMPLEX, WITH SPECIAL REFERENCE TO LOCAL ANESTHESIA IN BONE SURGERY*

Edward T. Newell, B.S., M.D., F.A.C.S., Chattanooga

GENERAL anesthesia twenty-five years ago was practically the only method in vogue in the pursuit of painless surgery. Cocaine and a few of its derivatives had been discovered and in use, but they were all so *toxic* that except for the local application of cocaine to the mucous membranes there was little general surgery being done at that time under local anesthesia, and most of this was minor surgery.

Today, local, regional, spinal, as well as the so-called epidural anesthesias, have advanced to such a point of efficiency that in all well-organized *clinics*, and in the hands of the skilled surgeons throughout the country, probably more than one-half of the surgery that is being done is performed by one or the other methods of so-called "local anesthesia," or, better, anesthesia without the loss of consciousness. This is separate and distinct from Crile's combined nitrous oxide and local anesthesia, which in reality is mostly local. His method is probably more simple and easier of application, but to my mind is not as efficacious as the method I will later describe.

It is rather remarkable to the speaker that the profession has been so slow in furthering the application of all forms of local and distant anesthesia, especially so since we have had novocain (apothacine), which is practically innocuous, for more than twelve years.

I am aware of the fact that the psychology of the individual patient has been a large factor in retarding the development of this valuable method. Many patients request (even demand) that they be given general anesthesia when they come to operation. They say they prefer not to know anything about what is to be done to them at the time of the operation.

One of the reasons for the past and present horror of operations aside from the anesthetics is that the lay public has the idea that all surgical procedures are wrought with pain and bloodshed, and interpret all operations from this viewpoint.

Within my day and within the memory of many of you, the approach of the patient to the operating room on the morning of the operation was usually attended by prayers in the early morning by the priest or family preacher, or some of the lay members of the family. There was a feeling of fear and foreboding cast upon the patient from the time the patient entered the hospital the evening before until he finally succumbed to the suffocating effect of ether in the operating room, where he was forcibly being held by nurses, orderlies, etc., or by large leather straps, having been strapped to the table, so that he could not move, before the anesthetic was begun, often by one who looked as serious as the patient felt.

Is it not rather unusual that the public has been as patient as it has with "general anesthesia," especially "ether anesthetic," except that they are assured by the ether anesthetist and by the surgeon that it is "fool proof and safe"? I grant you that these are the two most essential for any anesthetic, but would one be content today with the rubbing of bones together to diagnose a fracture when the X-ray is more accurate and causes no pain?

Nitrous oxide and ethylene are much more pleasant and not more dangerous in the hands of full-time anesthetists.

Spinal anesthesia, which is so rapidly gaining in popularity, is limited practically to the lower half of the body, and carries a too high mortality, even in the hands of men with wide experience in spinal anesthesia. There are less post-operative complications from spinal anesthesia, and the nausea and vomiting and headache are usually less than from general anesthesia. Relaxation under spinal is greater than under ether anesthesia. Spinal helps the surgeon, but at what price?

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*Read before the Railway Surgical Section of the Tennessee State Medical Association, Memphis, May 12, 13, 14, 1932.

Aside from general anesthetic, there is a "method of anesthesia" which can be carried out in major as well as minor surgery, which is practically without danger to the patient, and when surrounded by the proper environment and practiced by one skilled in its performance, should be made to nullify the horror of operations. This form of anesthesia is applicable to semi-major and selected major operations.

Technic.—The patients are given the night before the operation a capsule of Nembutal and placed in the most cheerful surroundings. The psychology of each patient must be carefully studied. The selection of the room for the patient, while of minor importance, has quite a bearing on the attitude of the patient before, during and after the operation. Plain white walls and white furniture are not as pleasing to some patients as rooms of light-green tint, with green trimming and green furniture, etc.; or for a young girl, a rose room would be most pleasing and effective.

The selection of the nurse—a young, bright, attractive nurse for a young person is often more in keeping with her or his spirit than an older, somber-faced nurse.

On the *morning* of the operation *one* or *two* capsules of Nembutal are given after the patient has been seen and the nervous state of the patient has been estimated. Forty-five minutes to an hour before the operation, a hypodermic, morphine one-fourth and atropine one-one-hundred-fiftieth is administered. When the patient enters the operating room, every one in the amphitheater should look and be as cheerful as possible, and words of encouragement should be expressed in regard to the operation by the surgeon in charge. Too much encouragement or making too lightly of the operation is as much an error as scaring the patient with pessimism as to its ultimate outcome. No levity is permissible; absolute confidence in the success of the operation and anesthetic must be obtained.

In a limited number of cases in youthful patients it is not amiss to have concealed music turned on after the operation begins—so low that the patient does not really realize that the music is in the operating room. If in doubt as to its proper reception, it is best not to attempt music during the operation; but if the patient expresses a desire for the music which is soft, low and distant, then it can be brought out with more force. This procedure is used in a few well-selected cases where the operation is not of a very serious nature, such as circumcision, hemorrhoids, hydrocele, hernia, D. & C. and cautery, some goiters and laparotomies. Music is said to be of great comfort to some patients during operations, but you must know your patient. The idea of music as an adjunct in local anesthesia is not original with me. Operations of this character have been practiced by some of the best surgeons throughout the country during the last few years in the successful carrying out of this "anesthetic complex."

The most important adjunct to the "local anesthesia" is the proper selection of what we term a "vocal anesthetist"—some one to stand at the head of the patient, *talk to the patient*, and interpret the condition of the patient throughout the operation. The patient is allowed ice water, Coca-Cola, chewing gum, cigarettes and to read if desired. None of these are obligatory.

If the patient is the least bit dubious about the success of the local anesthetic in his or her case, or if the operation is a major one, it is important that a gas machine with competent anesthetist be present throughout the entire operation, so the patient will feel in the event he should suffer any pain that he can be given a general anesthesia.

I would suggest that you use the smallest hypodermic needle to begin with, and as small as is comparable with good work throughout the remainder of the operation, for small needles produce less pain and less future morbidity. You *must not* cause pain.

As soon as the major pathology has been removed and the turning point in the operation has been reached, it is well to let the patient know that from this point on it will simply be a matter of "closure." I have seen patients that were quite shocked, when they were aware that the major part of the operation had been completed, come immediately out of shock.

We have done under local anesthesia quite a few laparotomies where general anesthesia was not desirable; serious goiter operations, and some not so serious; shoulder and forearm amputation, and some amputation in the lower part of the leg. The amputations were done in most cases on account of shock; and while some men believe that spinal anesthesia would be indicated in these cases, the writer does not agree with them for reasons too obvious to mention.

Most of our fracture work that has been done under local anesthesia has been by the infiltration method rather than by nerve blocking. While the latter is possibly the more scientific and is less likely to produce infection, it is more difficult to perform.

In our hands we have had no complications (no infections), following any of our "infiltration anesthesias," in fracture work.

In a paper on this subject read before the Southern Railway Surgeons in June, 1930, I had the following to say: "I have had a limited experience in its application in a rather large variety of fractures—in selected cases—and I am very favorably impressed as to its usefulness. It may be used by injecting the local anesthetic directly into the site of the fracture or by nerve blocking. I have had no mortality and no morbidity so far in any case that I have used this method, but my experience is too limited to recommend its general application in fracture work. General anesthesia — preferably ether—is necessary for the proper treatment of fractures."

Since this time I have increased the usefulness of local anesthesia in fractures—in fracture of the clavicle, fracture of the radius or ulna or both in the lower third. Fracture of the phalanges, hand or foot, and fracture of the lower third of the tibia or fibula, or both, are being increasingly set in our clinic under local infiltration anesthesia—2 per cent novocaine.

Local anesthesia is applicable in other more serious and more deeply imbedded fractures, but we are limiting its use as above.

Our technic is simple. We thoroughly cleanse the area to be injected and inject rather on the proximal side of the fracture, going down with the needle to the fracture line, endeavoring to get into the clot that has been formed and throw out a blanket of the anesthetic at the site of the fracture.

It is not necessary to inject entirely around the bone. You can usually get a complete anesthesia from one or two points of vantage. In some of our cases we have blocked the nerves, especially around the elbow, but have noted no real difference in the results, primarily or later.

In the nerve-blocking method and in injecting at the site of the fracture you must not be in too great a hurry to begin your manipulation, following your infiltration at the line of the fracture. This will often spell defeat, for you may not get the proper relaxation for good work.

Where you are setting your fractures under the fluoroscope, it is a distinct advantage to use local anesthesia, for you have no general anesthetic to make you hurry in your work, and also no fear that you might possibly have an explosion from a flash from the portable X-ray machine that you are using.

Aside from the unpleasantness of general anesthesia, the nausea and vomiting which so frequently follow, your patient (who we will say has a colles fracture) can leave the clinic or the hospital or the doctor's office as soon as the plaster has sufficiently hardened; while in the case of general anesthesia, especially in cold weather, the patient necessarily will have to remain for twenty-four hours in the hospital with added expense. There should be no controversy between local anesthesia and general anesthesia, provided it is proven that where local anesthesia has been used extensively, over quite a period of time, that *approximation is as good*, alignment is as perfect, callous formation is as early, firm and satisfactory, and no more infections occur than where general anesthesia has been used.

I wish to report briefly three cases that I have treated recently of fractures under local anesthesia, in all of which the results have been highly satisfactory up to the present time.

Case No. 1.—B. W. P. was brought to the sanitarium on February 26, suffering from gunshot wounds of both forearms. The right forearm had a large area of skin and soft parts blown away from charge of shotgun at close range. The left forearm in middle third had through-and-through wound, with compound comminuted fracture of right radius. Debridement of both wounds performed, Dakin tubes inserted in arm with compound fracture. On March 24, as slides showed only two or three organisms to field, the following day, under local infiltration anesthesia, incision was made down to overriding fragments, approximation done, both fragments drilled, sutured with chromic catgut and plaster cast applied. There was no pain at any time during the operation. Perfect relaxation was obtained, and patient is making an uneventful recovery. See films.

Case No. 2.—A. H., colored boy, on March 20 was run over by an automobile, receiving a compound fracture in the lower third of the leg, both bones. Under local anesthesia, the fracture was set, placed in plaster, and the patient sent home on the fourth day. He was back for inspection on April 6, and is getting along as perfectly and with as good approximation and alignment as could have been obtained under general anesthesia. See films.

Case No. 3.—C. L., white boy, injured March 27—automobile accident. Received a fractured skull—compound comminuted fracture of the right parietal bone, brain substances exuding. Patient was brought to sanitarium in semi-delirious condition, suffering from moderate shock. He was operated on three hours after entry under local anesthesia; fragments of bone removed and elevated, hemorrhage stopped, wound sutured, with drainage. Patient made an uneventful recovery, and is leaving the hospital tomorrow. See films.

This patient, as the other reported cases, was operated with ease. No pain or discomfort was experienced by any of the cases throughout any of the operations.

These three recent cases do not represent all of the cases of fractures that have been operated or treated during this period under *local,* but are taken to indicate the more serious types of fractures that can be operated and treated under local anesthesia, with the same degree of satisfaction as when general anesthesia is used.

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H. H. SHOULDERS, M.D., Editor and Secretary

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EDITORIAL

MEDICAL ETHICS

In the recent past lay people and some doctors have been disposed to make light of the code of ethics of the medical profession and to charge that it has stood in the way of progress. A little change in this attitude is noted. Just a few days ago a prominent business man was heard to remark to a doctor as follows: "How I wish we had in business some such code of ethics as you doctors have." The code doubtless has been in the way of some activities which some men have designated "progress," but there is a considerable amount of evidence to the effect that the thing these men called progress was not progress at all. It was a selfish end they were seeking.

On every side there is being brought further into the light of day evidences of the unwholesome effects which result from the use of power of whatever character ungoverned by fundamental ethical principles. This power may be financial. It may be political. It doesn't matter so much where the power originates. It is the use of it after all and the abuse of it which matters.

Our experiences and observations in the recent two and a half years are having the effect of impressing upon our minds the value of ethical principles as applied to the profession of medicine and as applied to business and to government. It is beginning to be apparent that material progress ungoverned by ethical principles amounts to worse than nothing.

Our code may be in the way of some forms of so-called progress. We are firm in the faith, however, that progress ungoverned will terminate in disaster: that the road to genuine progress and the happiness of humanity is the road on which travelers are governed not merely by laws but by ethical principles and the sooner unethical politics and unethical business and unethical banking are "tabooed" irrespective of whether or not unethical conduct is within the law, the sooner genuine progress will be established.

THE COST OF GOVERNMENT

The public health is a concern of the government. The preservation of the public health is of necessity a concern of the government. The definition of public health, however, should be understood as being distinguished from individual health.

Some weeks ago figures were published to show the cost of government. That is to say, the cost of carrying on the actual functions of governing. Alongside these figures were figures to show the cost of other activities of the government which have nothing at all to do with governing. The latter activities are far more expensive than the former. So, to speak of expenditures of government today as high cost of government is a misnomer. The term, or phrase, which should be used is "the high cost of non-governmental activities." If emphasis is placed on the abolishment of non-governmental activities, taxes can be reduced far more than twenty-five per cent, according to the figures referred to. The question is, shall the government tax the people to carry on activities which have nothing to do with government? Or shall non-governmental activities be reduced and taxes correspondingly reduced? These are, in our opinion, the fundamental questions. The reduction of taxes is only incidental.

Readers are referred to a communication under the heading of News Notes and Comment from the Board of Censors of the Memphis and Shelby County Medical Society. It relates to the subject of malpractice suits and should be of general interest.

SUBJECT OF FRACTURES

The general subject of fractures is justly receiving increasing attention from surgeons and specialists in orthopedics all over the country.

The American College of Surgeons first gave emphasis to the importance of the subject by the creation of a fracture committee, of which Dr. C. L. Scudder, of Boston, was made chairman. Dr. Scudder has been active in the promotion of the work of the committee.

Fractures are occurring with increasing frequency. The disabilities which result and the economics involved are enormous.

Any steps taken with a view to increasing a broad general knowledge of the subject with a corresponding improvement in the care of fractures is a movement which should be supported by the profession.

At the last meeting of the Mid-South Postgraduate Medical Assembly, held in Memphis, a group of men interested in fractures were called together by Dr. Scudder. A large group of general surgeons and orthopedists attended the meeting. A regional committee for the State of Tennessee was formed for the purpose of stimulating interest in the subject of fractures. Membership on this committee is composed of orthopedists and general surgeons interested in fractures regardless of whether they are members or not members of the College of Surgeons. The fundamental purpose is an improvement in the care of fractures. No pull for organization credit is made. The personnel of the preliminary committee is as follows:

Willis C. Campbell, Chairman	Memphis
R. W. Billington, Secretary	Nashville
C. P. Fox, Sr.	Greeneville
C. P. Fox, Jr.	Greeneville
Lee Gibson	Johnson City
Robert Patterson	Knoxville
Sam Hodge	Knoxville
R. C. Robertson	Chattanooga
Dunbar Newell	Chattanooga
E. T. Newell	Chattanooga
J. H. Revington	Chattanooga
W. A. Howard	Cookeville
Duncan Eve, Jr.	Nashville
George K. Carpenter	Nashville
Robert R. Brown	Nashville
E. A. Sayers	Nashville
Barney Brooks	Nashville
George C. Williamson	Columbia
John Ross	Clarksville
J. W. McClaran	Jackson
C. F. Webb	Jackson
J. P. Baird	Dyersburg
W. P. Watson	Dyersburg
J. S. Speed	Memphis
Jas. Bodley	Memphis
Alphonse Meyer	Memphis
Edwin Lipscomb	Memphis

We are glad to give space in the columns of the JOURNAL for such publicity as the committee may feel necessary in its work.

DEATHS

Alec Yancey, 16, son of Dr. and Mrs. T. B. Yancey, of Kingsport, died on April 26th.

RESOLUTIONS

It is with feelings of sorrow that we note the passing of two of our fellow members of the Johnson City and Washington County Medical Society, Doctor Searle B. Gillespie, age 51, who died at his apartment in Johnson City, Tennessee, April 7, 1932, and Doctor H. M. P. Panhorst, age 84, who died at his home in Jonesboro, Tennessee, April 23, 1932. Both of these Doctors were members in good standing in our Society, and it is with feelings of loss and deep regret that we record their passing from our midst. Both were active and efficient practitioners of their profession, and were kind, affable, and generous with their colleagues, their patients, and the public in general. Both had been residents of this vicinity for many years and had a wide circle of friends.

Therefore, be it resolved by the Johnson City and Washington County Medical Society in regular meeting assembled June 2, 1932:

> First: That we deeply deplore the passing of our professional brethren, Doctors Gillespie and Panhorst, and desire to express our sense of professional and personal loss in their deaths.
>
> Second: That we extend our sincere sympathy to the families of our departed friends in their great loss, and that we commend them to the all wise and divine

Comforter of us all in their sorrow and bereavement.

Third: That we furnish a copy of these resolutions to the families of Doctors Gillespie and Panhorst; that a copy be sent to *The Journal of the Tennessee State Medical Association;* and that a copy be filed with the minutes of the Johnson City and Washington County Medical Society.

Respectfully submitted by
C. W. Friberg,
Jno. L. Hankins,
W. J. Matthews,
Committee.

NEWS NOTES AND COMMENTS

Dear Doctor:

Because of the increasing number of malpractice suits against members of our society, the Board of Censors was instructed by the House of Delegates to write each member of the society calling attention to the increasing frequency of these suits and making such suggestions as to prevention as might seem useful.

In the first place, there is no ground for a claim in most of these cases as is usually shown when they come to trial. The trial of such suits causes a serious and unnecessary loss of time on the part of the plaintiff, the defendant, the lawyers and the witnesses in addition to engendering unnecessary animosities.

From information at hand it seems that not infrequently the seed of dissatisfaction is, perhaps unintentionally, sown by a fellow doctor, especially where a change in doctors has been made during the course of an illness. The Board of Censors feels sure that no member of this society would purposely create the feeling on the part of a patient or his family that another doctor had been negligent or had handled a case improperly, but it wishes to call your attention to the necessity for caution in discussing with laymen any other doctor's handling of a case. The layman's statement as to what another doctor did under given circumstances cannot always be relied upon as to accuracy, so we should not criticize the other doctor because of such statement, even though the statement may make it appear that criticism may be justified. In discussing methods of treatment, one method as compared with another may be only a matter of individual preference on the doctor's part and not one vital in principle. The layman is not likely to understand this, and too much talk, which may appear harmless to the doctor, may start an unnecessary and unwarranted damage suit.

We think it proper to suggest that each of us make the Golden Rule his guide in his relations with his fellow practitioners, and that every care be exercised in avoiding even an implied criticism of any other doctor in the handling of any given case.

Sincerely yours,
H. B. Everett,
J. B. Blue,
O. S. McCown, *Chairman*
Board of Censors.

Dr. Richmond McKinney, of Memphis, has been elected President of the American Bronschoscopic Society.

Tennessee State Board of Medical Examiners are holding annual examinations on June 15 and 16 in Knoxville, Memphis, and Nashville.

Dr. J. H. Preas, of Johnson City, recently visited his son in Florida. This was the doctor's first vacation in forty-five years.

Dr. W. S. Rude, of Ridgetop, addressed the Springfield students on "Good Health." Dr. Rude was the representative of the Robertson County physicians in the Boys' Week program.

The American Proctological Society met in Memphis May 6 and 7. About 300 members were present. Dr. John L. Jelks was chairman of the Arrangements Committee. This, of course, guaranteed the success of the meeting.

Dr. Carl W. Brabson is moving from Greeneville to Limestone.

On May 24th, at the Ninetieth Commencement of Howard College in Birmingham, Alabama, that institution conferred the degree of Doctor of Laws on Dr. A. Richard Bliss, Jr., Chief of the Division of Pharmacology, College of Medicine, University of Tennessee (Memphis). Dr. Bliss is an alumnus ('12) of Howard College.

Kingsport "Sawbones" and "Mouthpieces," otherwise the doctors and lawyers, engaged in a baseball game May 26. During the postmortem after the game the lawyers attached the gate receipts. As usual, the doctors get *credit* for putting up a good fight while the *cash,* if any, goes to the undertaker and lawyer.

MEDICAL SOCIETIES

Nashville Academy of Medicine and Davidson County Medical Society

May 13th—"Experience with the Calmette Inoculation Against Tuberculosis During the Past Six Years in New York City," by Dr. W. H. Park, New York, and Dr. Camille Kereszturi, New York.

May 17th—"The Nature and Uses of Lysed Typhoid Vaccine and Report of 180 Cases of Typhoid Treated with Di Cristina Vaccine," by Dr. T. V. Woodring. Discussion opened by Dr. William Litterer.

May 24th—"The Early Treatment of Head Injuries," by Dr. E. A. Sayers. Discussion opened by Dr. T. D. McKinney.

May 28th—"Four Consecutive Generations of Congenital Dislocated Hip," with Lantern Slide and X-ray Films," by Dr. E. M. Regen. Discussion opened by Dr. R. W. Billington.

The next meeting of the Academy will be on the first Tuesday night in September.

Gibson County—The Gibson County Medical Society met in Trenton Saturday, May 14. There were fifty doctors present, several of whom were visitors from neighboring counties. Dr. D. R. Pickens, of Nashville, read a paper on "Rectal Bleeding," and Dr. O. N. Bryan, of Nashville, read a paper on "Pernicious Anemia." Dr. J. C. Litzenberg, Chief of the Department of Obstetrics of the University of Minnesota and the Mayo Foundation, discussed postnatal care with special reference to the prevention of cancer of the cervix. Dr. S. C. Cowan, of Nashville, discussed Dr. Litzenberg's paper. Dr. Litzenberg was the guest of the county society under the auspices of a grant from the Commonwealth Fund.

Another good meeting, well attended, was held on May 30. Dr. Drew Luten, of St. Louis, spoke on the subject "Diagnosis in General Practice," and Dr. Theo C. Hempelmann, of St. Louis, discussed "Nose and Throat Infections in Children."

Benton-Carroll-Henry-Weakley—On May 3, Drs. W. O. Floyd and W. H. Witt, of Nashville, spoke to this society. The subjects were "Organic Diseases of the Stomach," and "Nervous Indigestion," respectively. Twenty-five physicians heard these instructive lectures.

A committee was appointed to arrange for the annual celebration to be held in July.

Hamilton County—June 16. "Some Endocrinologic Disturbances in Childhood," by Dr. W. E. Van Order.

June 23rd—"Peptic Ulcer," by Dr. J. B. Haskins.

June 30th — "The Larynx and its Diseases," by Dr. A. E. Goodloe.

July 14th—"Chronic Appendicitis," by Dr. J. J. Armstrong. "Surgical Conditions of the Gall Bladder," by Dr. Hiram A. Laws.

August 11th—"The History of the Medical Profession in Chattanooga," by Dr. J. B. Brooks. "Looking Backward," by Dr. Fred B. Stapp.

Giles County—At the May meeting Dr. A. W. Deane read the principal paper on "Pellagra."

Roane County—Two papers were read at the May meeting, one by Dr. G. P. Zirkle on "Gastric Ulcers," and the other by Dr. W. W. Hill on "Headaches—Their Causes." All present joined in the discussion. A heart case was presented by Dr. Zirkle.

The next meeting will be held June 21st.

Putnam-White-Overton-Cumberland and *Jackson*—The Five County Medical Society met at the Shamrock Hotel in Gainesboro May 19th. The following papers were read: "Trembles, with a report of case," by Dr. L. M. Freeman, Granville. Discussion opened by Dr. Lex Dyer, Cookeville. "Observations of the Improvements noted in the Practice of Medicine during 42 years as a country doctor," by Dr. S. E. Gaines, Sparta. Discussion opened by Dr. C. E. Reeves, Gainesboro.

Query Section: (1) What is your attitude in regard to enforcement of law in the treatment of syphilis? by Dr. J. B. White. (2) What is the most important treatment of acute iritis? by Dr. Brown. (3) How do you treat vesicle paralysis following dystocia? Dr. Johnson. (4) What has been your experience with hydatid mole, and what do you know about it? Dr. E. B. Clark. (5) What should the medical societies do about mid-wife practice? Dr. Crain. (6) What is a soldier's heart? Dr. Gaines. (7) What is the best treatment for a leucopenia when you can't determine pathology? Dr. E. B. Clark.

Knox County — May 14th. Dr. J. S. Lundy, of the Mayo Clinic, addressed the society on "Balanced Anesthesia."

May 24—Dr. Robert Patterson read a paper on "Useful Facts about Treating Fractures."

May 31—Dr. Oliver W. Hill read a paper on "A Discussion of Blood Pictures in Children."

Committees were appointed to arrange for the big all-day meeting to be held in September.

Montgomery County—On May 18th, the Montgomery County Medical Society entertained two Kentucky societies (Christian County and Todd County). Twenty-five Kentucky doctors were present with the hosts numbered fifteen. Dr. Virgil Simpson, of Louisville, spoke on "Poliomyelitis" and Dr. M. A. Gilmore, of Hopkinsville, on "Complications of Nasal Sinus Diseases."

Sullivan-Johnson Counties—On May 6, after supper at Kingston Inn, Dr. T. B. Yancey read a paper on "Prenatal Care."

Portions of a letter from Dr. W. K. Vance, Secretary of the society, tells of the plans for the future. We quote from it as it shows what can be done anywhere and what should be done everywhere: "The membership of our society has been dragging for some time but now we have awakened some interest in more of the members and are looking forward to better programs and consequently a better attendance.

"We have decided to start our meetings, which were changed to night meetings, with supper and have the program afterward. We have also decided to spend a little money and get invited speakers to address the society at the quarterly meetings, the members furnishing the program at the intervening meetings.

"On March 9, we had Dr. Fred W. Rankins, of the Mayo Clinic, whose subject was 'Diagnosis and Treatment of Cancer of the Large Bowel.'

"On June 1st, we had Dr. D. Lesesne Smith, of Saluda, North Carolina, on 'Preventative Pediatrics.'

"On September 1st, we will have Dr. J. R. McCord, of Atlanta, on 'Prenatal Care, Toxemias of Pregnancy and Chronic Nephritis.'

"On December 1, we are looking forward to Dr. Stuart McGuire, of Richmond, Virginia, on some surgical subject, probably 'Diagnosis of Acute Abdomen.'

"We feel that the money put out for these invited speakers will be well spent for we will have something good for the members and will keep their interests and stimulate membership. All of the doctors in this section of the state are invited to the meetings and we send out personal invitations to the individuals and also to the adjoining medical societies.

"Our membership has increased and I believe it will continue to do so."

OTHER MEDICAL SOCIETIES

The West Tennessee Medical Association held its meeting in Jackson on May 26 and 27. The session was well advertised all over West Tennessee and the attendance was exceedingly good. The program was probably the best in several years.

VANDERBILT UNIVERSITY MEDICAL SOCIETY

1. Case Reports:
   (a) Four Generations of Congenital Dislocation of the Hip.—Dr. E. M. Regen.

M. L., white, female, age 4. This case was presented to show the definite hereditary tendency in congenital dislocation of the hip, there being four successive generations occurring in the family tree. It is felt that this case strongly supports other reports showing the hereditary tendency in this disease.

Case discussed by Drs. Billington, Reinke, Meleney and Mason.

(b) The Effect of Prolan on the Hyperplastic Endometrium.—Drs. Harold Klingler and John C. Burch.

Recent reports on the efficacy of the so-called anterior-pituitary luteinizing hormone have been most encouraging. Prolan therapy was instigated in a case of endometrial hyperplasia with apparent control of bleeding. Endometrial biopsies were obtained throughout the menstrual cycle by means of a cannula-suction apparatus and all showed characteristic hyperplastic endometrium. The case clearly illustrates the beneficial effects of prolan. It also illustrates that the drug may exercise its immediate effect without producing progestational proliferation.

Case discussed by Drs. John C. Burch and Cunningham.

2. The Effects of Roentgen Rays on Bone Growth and Bone Regeneration.—Drs. H. T. Hillstrom and E. M. Regen.

Definite retardation of growth of bones ensues following their irradiation with quantities of roentgen rays ranging from 40 per cent to 100 per cent of a skin erythema dose. The greatest changes following irradiation take place in the rapidly dividing cells of the upper portions of the columns of the epiphyseal cartilage. Degenerative changes can be seen here as early as the first day and increase in amount during the first week after exposure to roentgen rays. Regeneration of cartilage cells starts at the beginning of the second week but never becomes entirely complete. Roentgen rays in doses from 22½ per cent to 100 per cent S. E. D. have no gross effect on bone regeneration, indicating that bone growth and bone regeneration are two distinct and different cell functions.

Paper discussed by Drs. Cunningham, Billington, and Blalock.

3. Endemic Edema.—Drs. J. B. Youmans, Austin Bell, Dorothy Donley and Miss Helen Frank.

For several years many cases of edema unaccompanied by other disease and apparently nutritional in nature have been observed in the vicinity of Nashville. The cases have been sufficiently numerous to warrant the use of the term endemic. Studies have shown an inadequacy of protein in the diet. The serum albumin has been found to be slightly to moderately below normal. In some of the cases an increase in the protein of the diet has been accompanied by an increase in serum albumin and a loss of the edema. The possibility that the dietary inadequacy has other effects more important than the production of an edema demands consideration.

Paper discussed by Drs. Burwell, Harrison, Meleney, Riven and Garrey.

NEWS OF WOMAN'S AUXILIARY

SHELBY COUNTY

The regular monthly meeting of the Woman's Auxiliary to the Memphis and Shelby County Medical Society, was held at the University of Tennessee on May 18, Mrs. W. T. Black, president, presiding.

The treasurer's report showed a balance on hand of $137.33, $600.00 being turned over to the Student Loan Fund in the month of April, making a balance in Student Loan Fund of $4,000.64 to date.

Mrs. John Shea, hygeia chairman, was in charge of the program of the day, and introduced Dr. L. M. Graves, who gave a most interesting health talk.

Twelve new members were reported since the beginning of the fiscal year, April 1.

KNOX COUNTY

The Knox County Auxiliary met for luncheon with Mrs. R. G. Reaves, May 18. This was the last meeting of the year and the business was presided over by Mrs. W. A. Shelton, president. This meeting marked the close of the Octagon Coupon drive to secure the Audiometer. The coupons secured in less than two months amounted to 104,000. This assures us of the Audiometer and enough charts to be used in the city schools for a year.

The new officers were installed by our state president, Mrs. Oliver Hill: President, Mrs. C. R. Martin; Vice President, Mrs. H. E. Christenberry; Recording Secretary, Mrs. R. G. Tappan; Corresponding Secretary, Mrs. Hugh Reaves; Treasurer, Mrs. W. F. Dorsey.

SULLIVAN-JOHNSON COUNTY

The Sullivan-Johnson County Medical Auxiliary met at the home of Mrs. E. W. Tipton, Friday, May 27, to perfect the organization with the State officers, Mrs. Hill and Mrs. Shelton, of Knoxville, present.

The following officers were elected: President, Mrs. T. B. Yancey, Kingsport; First Vice President of Sullivan County, Mrs. Nat Copenhaver, Bristol; Second Vice President of Johnson County, Mrs. Smyth, Mountain City; Recording Secretary, Mrs. James Butler, Mountain City; Corresponding Secretary, Mrs. G. G. Keener, Kingsport; Treasurer, Mrs. English, Bristol; Historian, Mrs. Turner, Bristol.

DAVIDSON COUNTY

The Woman's Auxiliary of the Nashville Academy of Medicine and Davidson County Medical Society met Monday morning, May 2, at the Y. W. C. A. for its annual business meeting. The election of officers for the year was held, Mrs. Theodore Morford being re-elected president. Other officers elected were: Vice President, Mrs. B. F. Byrd; Recording Secretary, Mrs. W. R. Cate; Corresponding Secretary, Mrs. Carl McMurray; Treasurer, Mrs. Herschel Ezell.

Mrs. Oscar G. Nelson served as chairman of the nominating committee.

The annual reports of the officers and chairmen of standing committees were given. Reports of the State meeting recently held in Memphis were given, and the newly elected State officers who are also members of the local auxiliary were introduced.

Mrs. D. W. Smith, chairman of the auxiliary's float in the health parade, described the float, which was in the form of a miniature supervised playground, the idea emphasizing the care of children of the pre-school age.

ABSTRACTS OF CURRENT LITERATURE

ANESTHESIA

By Hugh Barr, M.D.
Medical Arts Bldg., Nashville

Nitrous Oxid-Oxygen Anesthesia: A Consideration of Some Associated Factors. E. I. McKesson, M.D., Toledo, Ohio. Current Researches in Anesthesia and Analgesia, March-April, 1932.

As pre-operative medication to nitrous oxid-oxygen anesthesia hyoscin is to be preferred to atropin or dependence is placed in morphine alone. The barbiturates are not a substitute for morphine since they do not afford adequate protection from pain reflexes, but should be used in conjunction with morphine. It is futile to attempt to use nitrous oxid routinely for major surgery without particular care given to premedication of the patient. As a pre-anesthetic hypnotic a full dose of morphine and sufficient barbiturate is used to secure a fearless semi-conscious state. Roughly half the anesthesia may be borne by the hypnotic. More lives have been lost from shock due to want of adequate doses of morphine than from any other single cause.

Vital capacity is very important and should be measured. Vital capacity is reduced 5 to 10 per cent by the recumbent posture, while in fat women the reduction is much more in the Trendelenberg position. Carbon dioxide is used to stimulate depth of respiration in 5 to 10 per cent concentration. It augments exposure of lung for deeper anesthesia and absorption. Is used to eliminate the anesthetic and to stop hiccough and to prevent pneumonitis. Carbon dioxid like many drugs first stimulates in small doses and depresses in larger doses. Rebreathing answers the same purpose but is slower in action.

The author prefers the sitting posture for operations upon the teeth, tonsils and the sinuses, since blood flows out of the mouth in this position. The tongue depressor in tonsil operations should pull the tongue forward and away from the tonsil to be exposed and afford a breathing space in the angle exposed. An orderly procedure in exploration, operation and closure by the abdominal surgeon is a great help to anesthetist and relieves the patient of a prolonged deep narcosis.

DERMATOLOGY

By E. E. Brown, M.D.
Doctors Building, Nashville

Iodobismitol. By P. J. Hanzlik, H. G. Mehrtens, Charles Gurchot, C. C. Johnson, Jean Spaulding and D. C. Marshall. J. A. M. A., Feb. 13, 1932.

The authors describe in detail their work with this soluble bismuth product. They reached the conclusions that it was good for early treatment of syphilis and prevention of neurosyphilis. The success of this preparation of bismuth is based upon the fact that it is an anion, while other preparations of this metal are cations, and is therefore able to penetrate brain tissue. In their preliminary report it is said to be well tolerated locally and systemically, to be fairly rapidly absorbed and excreted, to possess antisyphilitic action, to penertate the brain of animals, and to appear in the cerebrospinal fluid of human beings.

It is given intramuscularly in doses of 2 c.c., and the suggested course of treatment consists of ten injections with an interval of two days between each injection.

Note: I have used this preparation on a number of patients and the clinical results have been good. However, practically all of the patients complain of pain during the injection, but no soreness following same.

OPHTHALMOLOGY

By Robert J. Warner, M.D.
Doctors Building, Nashville

The Intradermal Reaction in Trachoma. R. Tricoire. Archives of Ophthalmology, May, 1932.

In 1923 the author proposed a diagnostic intradermal test for trachoma. Twenty-five hundredths cubic centimeter of the preparation is used. It is prepared as follows: Trachomatous granules, preferably from an untreated subject, are mixed aseptically with ten times their volume of physiologic solution of sodium chloride, triturated with a glass rod and allowed to macerate in an oven at 37 C. After two weeks in the oven, it is centrifugated in sterile tubes; the liquid that is on top is removed and added to its volume of physiologic solution of sodium chloride. This is the reagent. To prevent any chance of infection, two drops of tincture of iodine is added to each 10 c.c. of the reagent. The iodine may be neutralized after one-half hour with a drop of sterile sodium hyposulphite. A positive reaction is noted in the appearance of a red, painless papule, which appears about forty-eight hours after injection and may persist for two or three days. In nontrachomatous cases, there is no reaction. The results obtained by various workers are cited. R. C. Mikaelian found the reaction positive in 68 per cent of his cases of trachoma. Where the Porwaczek bodies were found, the reaction was usually positive. R. Bellot found 70 per cent positive reactions. Most authorities agree that positive reaction are obtained in the florid type, while in older cases in which cicatrix has been formed the reactions are doubtful or negative.

The author believes that the greatest value of the test is in estimating the contagiousness of trachoma.

ORTHOPEDIC SURGERY

By Robert F. Patterson, M.D.
Medical Arts Building, Knoxville

Dislocation of the Knee Joint. By Henry H. Ritter Jone, Bone & Joint Surgeon, April, 1932.

It is remarkable that the knee joint, though injured more often than any other joint, is rarely subject to dislocation. Luxation cannot occur without tearing or stretching the ligaments and other soft structures. Only one dislocation of the knee occurred in 23,000 accident cases in the Reconstruction Hospital in New York City. The author reports a case of complete forward dislocation of the tibia on the femur, due to a fall in which the left leg lunged forward. It was easily reduced by traction and slight flexion. Thirteen months after accident she had practically normal function in the knee.

Making a New Ligament in Ankle Sprains. By Harold Nilsonne Jone, Bone & Joint Surgeon, April, 1932.

"Sprained ankle ('Fork sprain') is one of the commonest foot injuries and always leads to considerable and persistent complaints."

Its seriousness is often underestimated by the family doctor, and it is often disregarded by the patient if the x-ray shows no fracture. As a matter of fact, in severe cases the astragalus actually rotates laterally within the ankle mortise, giving the patient the sensation of jumping out of place.

He reports a case of a young girl who had such an unstable joint following forcible supination of the foot. It could be passively supinated far beyond the usual range.

He advised operation, and through a curved incision below and behind the external malleolus exposed the fascia and beneath a cavity was found under the tip of the malleolus. This communicated with the ankle joint and with the peroneal sheath backwards. It was lined with synovial membrane. The calconeofibular ligament was ruptured transversely while the talofibular ligament was intact. The joint was closed. The ruptured ligament was sutured and the peroneus brevis tendon was severed opposite the retinaculum and buried in a grove subperiostially on the outer aspect of the external malleolus. The stump of the peroneus brevis was sutured to the peroneus longus.

The operation produced complete stability.

OTOLOGY, LARYNGOLOGY, RHINOLOGY

By W. G. Kennon. M.D.
Doctors' Building, Nashville

Electrosurgery and the Otolaryngologist. Frederick B. Balmer, M. D., Chicago, Ill. Archives of Otolaryngology, April, 1932. Vol. 15, No. 4.

A thorough knowledge of the various currents to be employed together with their proper application is absolutely perequisite for the proper and safe use of electrosurgery.

The procedure is not fool-proof or free from danger in the hands of the ill-trained. Electrocoagulation or surgical diathermy is the method employed when deep destruction of tissue about the needle or electrode which is inserted into or placed in contact with it.

In the light of present knowledge concerning the tonsil it is generally agreed that nothing short of complete removal of these structures is to be desired.

Electro-coagulation or surgical diathermy is the method best suited to the gradual extirpation of the tonsils.

Thorough knowledge and the ability to remove tonsils surgically, as well as a knowledge of the electrical currents employed, is absolutely essential to the proper and safe use of electrosurgery. It is a dangerous weapon in the hands of the ill-trained. In general, the majority of tonsils are better suited to surgical removal.

It is ridiculous to employ electro-coagulation when there is no real contraindication to the surgical removal.

To destroy the outer two-thirds of the tonsil is a simple conservative procedure; but to remove every vestige of tonsillar tissue by means of surgical diathermy is a test of one's ability. This statement is made advisedly as it has not been within the author's experience to see perfectly clean fossae in patients who have come to him after being subjected to the electrical method. Usually they are most unsatisfactory.

Electro-coagulation is unsuitable for children, for extremely nervous and refractory patients, for those with uncontrollable pharyngeal reflex; for all cases in which local operations are contraindicated, and for cases in which the time required cannot be allotted for the safe and complete procedure. It is advisable to keep the procedure as simple as possible, avoiding injection, nerve blocks, etc., as this would be precarious were the procedure repeated several times and one had better resort to straightway surgical removal.

Therefore, it is essential that such patients be selected as will at least permit one to look at the tonsil without going into a tantrum. It is both unsafe and unsatisfactory in an uncontrollable refracatory patient.

Skill will register in this work, and one may leave evidence of incomplete removal in a very cooperative patient, to say nothing of one who will not permit of delicate work without perpetual gagging. As this method is advocated for and employed to advantage when conservatism and safety are the essential factors, its every purpose is defeated by attempting the removal of the entire tonsil at one sitting.

It is extremely dangerous, surgery being infinitely safer. It is not possible to know how far the current has destroyed the tissue when a large amount is affected. When this has been attempted some alarming and dangerous complications have occurred.

INDICATIONS

1. Post operative tonsillar remains.
2. Lingual hypertrophy and varix.
3. Various fungous diseases of the tonsils.
4. Blood dyscrasias such as hemophilia and anemia.
5. Various general conditions accompanied by serious involvement of the heart, lungs, and kidneys and certain other diseases such as syphilis, arthritis and sclerosis.
6. The aged and infirm.
7. Those persons refusing surgical removal.

The description of the method employed follows:

Topical anesthesia is used. Any operator who maintains that with a small amount of surface or topical anesthesia there is no pain or discomfort is handling the truth loosely. Numerous objections made to electro-coagulation have been made. The technical applications and the type of current used were probably at fault, and the results justified the criticism. The improper selection of cases is a frequent cause of an unsuccessful result.

While no attempt is being made to replace surgical tonsillectomy by the electrical method, the latter has distinct merit in properly selected cases. Surgery will continue to be the method of choice in most cases, but its use is frequently contraindicated. Under such circumstances, electrosurgical extirpation should be considered as an appropriate and scientific means of removing tonsillar tissue. Coagulation, when properly performed, removes the tissue cleanly, with a minimum of scar tissue.

PEDIATRICS

By John M. Lee, M.D.

Doctors Building, Nashville

Intestinal Disturbances in Infancy Due to Allergy. Carroll M. Pounders, M. D. Archives Pediatrics, May, 1932.

Many infants on breast milk or proper formula make satisfactory gains in weight, but have intestinal discomfort, sleep badly, spit up the food and may have abnormal stools. Changing elements in the formula, changing from breast to bottle, etc., give temporary relief, but the symptoms recur.

For some years investigators have suspected the nature of the cause of these symptoms, and increased knowledge of the physiology of digestion and lactation of the nursing mother have strengthened these suspicions. It has been shown that undigested foreign protein may permeate the intestinal tract and sensitize the infant to that protein. Proteins ingested by the mother may pass from the maternal circulation through the placenta and sensitize the fetus. On coming in contact with this food in later life the infant may show some allergic manifestation. The foods to which the child is sensitive may be tolerated if they are denaturized by heating for a long time. These and other facts of a similar nature warrant the conclusion that many cases of disturbance of digestion in early life are allergic in nature.

While breast fed babies may have difficulty with mother's milk or some protein coming through the mother's milk, most cases occur in those babies fed on cow's milk. Often on one or both sides there is a nervous, anxious, high strung parent. There may be a history of allergy in the family. Often the trouble starts after an abrupt change to cow's milk in large amount.

The author summarizes: "Most of these babies get along fairly satisfactorily on some preparation of milk that has been 'denaturized' by heating, evaporating or drying. The natural tendency is to eventually establish a tolerance for the disturbing protein.

"By way of prophylaxis, a pregnant woman who has a family or personal history of allergy should not be given unusual amounts of milk or any other single food for very long periods of time. Babies with allergic backgrounds should be put on cow's milk very cautiously and should in the beginning be given only small amounts of a preparation that has been boiled, dried or evaporated."

SURGERY — GENERAL AND ABDOMINAL

By John L. Dies, M.D.

1213 Exchange Building, Memphis

Traumatic Inguinal Hernia. John J. Moorehead, M. D. The Journal of the American Medical Association, Vol. 98, No. 21, May 21, 1932. pp. 1785-1788.

Statistics have been compiled by Dr. Walter D. Ludlum, Jr.

In 232 consecutive adult male cases, 182 were unilateral and 50 were bilateral; there were 18 recurrent cases. Ninety-five per cent of the men were between the ages of 20 and 60 years; 52 per cent between 20 and 40. The average age was 37.5 years. The greatest proportion, 32 per cent, occurred in the fourth decade, from 30 to 40.

The duration in 12 per cent was less than one week; in 40 per cent, less than one month; in 75 per cent, less than one year.

The onset was sudden in 66 per cent, the result of a definite strain in 60 per cent, and of a gradual onset in 34 per cent.

It was direct in 25 per cent, indirect in 23 per cent, and direct and indirect in 36 per cent.

In the last five years, spinal anesthesia has been used in 86 per cent and gas ether in 14 per cent.

The Bassini operation was used in 47 per cent; the Bassini without a cord transplant in 40 per cent.

The recurrent group included eighteen cases, or 8 per cent. The time since prior operation average six and one-half years. The average duration of recurrence was twenty and one-half months; the average duration of symptoms, four and one-half months.

Complications included one death (0.4 per cent) from peritonitis due to bladder injury; pneumonia or pulmonary complications, 6.8 per cent, and suppuration, 3.8 per cent.

In 63 per cent of the series reported, fibrous thickening of the sac occurred in 16 per cent, fibrous and inflammatory changes took place in 10 per cent, and no changes were found in 22 per cent.

The same figures pertain to the group with sudden or with gradual onset.

CONCLUSIONS

1. The preformed sac is the essential factor, and this is the congenital element of greatest importance.

2. Every inguinal hernia in the adult male has an inherent and inevitable tendency to increase and, sooner or later, may become manifest to the possessor or to the examining physician.

3. Aggravation of the hernia by some form of intraabdominal pressure can be accomplished if the violence is adequate and the symptoms are appropriate. These symptoms are immediate in

onset and consist essentially of pain, nausea, swelling and local tenderness.

4. Aggravation in reality is less common than is suspected (a) because evidences of it are almost never seen in the presence of even severe contiguous injury, (b) because at operation there are no local signs of recent trauma, and (c) because the pathologic examination also fails to show evidence of recent trauma.

5. A postoperative recurrence rate of approximately 10 per cent occurs among workmen.

6. Prolonging the period of postoperative convalescence may hinder rather than benefit the patient by inducing muscular atrophy of disuse.

7. The relation of hernia to a given trauma can be proved by (a) the history of intra-abdominal pressure followed by immediate symptoms, (b) the operative observations, and (c) the pathologic report.

8. An isolated or single injury is never the source or origin of inguinal hernia, and aggravation or acceleration by trauma is exceedingly rare.

9. Traumac inguinal hernia is a myth that should be consigned to the museum of historical relics of a bygone era.

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MANAGEMENT OF THE POSTERIOR POSITIONS OF THE OCCIPUT*

C. C. VINSANT, M.D., Maryville

IN presenting a paper on posterior positions of the occiput, may I call your attention to the fact, that it is by far the most common abnormality or complication with which the physician practicing obstetrics has to deal; in other words, if frequency of occurence would place it in the normal class I would sometimes be tempted to so class it. And, judging from the great diversity of opinions as to the management and treatment of the occipito-posterior positions, in recent literature, the problem has not yet been satisfactorily solved, which, in part, may account for the high maternal and fetal morbidity and mortality both in hospital and private practice. My limited experience has been almost exclusively in the home. Only the most serious cases have been treated in the hospital.

Not only is it the most frequent complication, or difficulty, but should you ask what obstetric complication had caused the most maternal or fetal deaths; what one had caused most maternal or fetal accidents, not necessarily fatal accidents, however, often rendering the rest of life worthless, or still worse than worthless, a tragedy, I would readily say "persistent" occipito-posterior position, improperly managed. I do not mean to say that it is the most *serious* complication of labor, but because of its frequency of occurence, it is certainly a great source of annoyance to the attending physician as well as the patient and family, and still remains to be a nightmare to the physician who practices obstetrics.

The careful analysis of former labors in cases presenting the past histories of stillborn children or of infants who have succumbed shortly after instrumental delivery, often reveals the earmarks of faulty management of this common complication. Errors of diagnosis and treatment of this position are observed so frequently that one wonders if the fault does not lie universally with the instruction of obstetrics rather than with those instructed. DeLee ascribes to the improper conduct of these cases the annual total, in the United States alone, of several thousand infant deaths and hundreds of maimed and invalided mothers.

Any condition which causes so much avoidable mortality and morbidity calls for an inventory of the various methods whereby these unhappy results can at least be reduced in number.

It has been estimated that 95 per cent of all presentations, at the beginning of labor, are vertex presentations, and in approximately one-third of this number the occiput is directed posteriorly. For the same reason that the greater number of anterior positions are directed to the left, by far the greater number of posterior positions are directed to the right—right occipito-posterior positions. The frequency of occurence of the posterior position is estimated by different writers, as from 10 to 40 per cent of all vertex presentations. I believe that the man doing obstetrics and only finds 10 per cent posterior positions fails to make an early diagnosis and only makes a diagnosis in those cases which fail to rotate, because, if given sufficient time 85 to 90 per cent of all occipito-posterior positions rotate anteriorly spontaneously and are delivered as such, leaving 10 to 15 per cent still persisting as posterior positions. These are usually termed "Persistent Occipito-Positions," and must be managed by the method best selected by the operator in attendance.

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*Read before the Tennessee State Medical Association, Memphis, April 12, 13, 14, 1932.

The mechanism of labor in the posterior position of the occiput differs from that of the anterior positions in that rotations in the former takes place through an arc of 135 degrees instead of 45 degrees as in the latter positions, which, naturally, will add to the length of time of labor, and necessarily calls for more pain and effort on the part of the patient to deliver, than in the anterior position.

The proper management of an occipito-posterior position should begin with the first signs of labor. Then, to be able to successfully treat this difficult and at times most trying complication of labor, it is very important to make an early diagnosis. An early diagnosis is just as important in this condition as any other emergency, medical or surgical. This does not mean that an early diagnosis is always easy or can be made, for under certain conditions it is not possible to make a definite diagnosis until after the cervix is partially or almost completely dilated; even then it is necessary at times to introduce the hand and palpate the posterior ear. Failure to make an early, or to make a diagnosis at all, is responsible for no small share of the misfortunes attributed to this abnormality. The consequences of error are here so hazardous that every vertex presentation which does not progress smoothly should be carefully scrutinized for the possibility of a mistake in this direction.

Once the existence of a posterior position has been established, the prudent attendant fortifies his patient, adopts an attitude of watchful expectancy, and awaits some indication for interference.

One of the first signs which has impressed me, in making a diagnosis of occipito-posterior positions, after labor has begun, is the progress of the labor. Of course, it is conceded by those who have observed this condition that labor is slower and longer, usually on an average of six to eight hours, especially in primipara. Not only this, the patient is restless, irritable and at times as cross as a Smoky Mountain cat. In other words, things are not going well; complains of pains in the back; pains are short, weak and irregular both as to time and strength. These symptoms alone should arouse suspicion. Early rupture of the membranes is a frequent complication, the premature rupture of the membranes, even before the onset labor, happens often enough in this position to suggest something abnormal.

Early in the first stage of labor, even before the cervix is sufficiently dilated to palpate the suture lines and fontanelles, abdominal palpation will often suffice to determine the position. The smooth surface of the fetal back is felt well into the mother's flank, with the anterior shoulder well back from the median line. The head of the child is usually found higher with a greater space between the presenting part and the rami of the pubes, than is found in the anterior positions, due to a deflection of the head, a condition which we must strive to overcome in the management of these conditions. The fetal heart sounds are more distant and found located in the flank toward which the back of the fetus is turned. Or if there is much deflection of the head, the chest is pushed forward, one hearing distinct heart sounds nearer the median line above the symphysis. It is possible for the progress of labor to change these findings and by the time the cervix has dilated sufficiently to make an exact diagnosis of the position of the head, it has rotated anteriorly and in a normal position. Therefore, a diagnosis upon which we may rely with very much certainty and by which we may plan anything like a definite treatment, must wait until the cervix is dilated to the point where the sutures and fontanelles may be palpated either by rectum or vaginal palpation. When the head is well flexed the posterior fontanelle is prominent and usually found in the anterior position, and when deflection exists the anterior fontanelle is palpable, usually also in the anterior position, therefore, definitely establishing the diagnosis. It is not uncommon to be able to feel both fontanelles at the end of the first stage of labor, when a posterior position is present. The right occipito-posterior being the most common posterior position, for the same reason that that L. O. A. is the most common anterior position, the anterior or large fontanelle which is formed by the crossing of the coronal and sagital sutures and has four lines of sutures leading away at right angles, and usually stands out prominently in posterior positions, because of the deflection present, is palpated in the left oblique anterior diameter, and the smaller or posterior fontanelle, formed by the junction of the sagital with the lamdoidal sutures, there being only three lines of sutures, forming an angle resembling the Greek letter "A," is found to be in the right posterior quadrant. And the reverse for the L. O. P. Another very valuable sign, which I have learned to rely on very much is the backward location of the cervix. At times it is pushed so far back by the occiput that it is difficult to reach it with the examining finger, this condition persisting until dilatation is complete before the anterior lip of the cervix is retracted back over the bregma. Correction of the position should not be attempted, unless an emergency is present, until the cervix has retracted backward over the head. The farther backward into the culdesac the cervix is found, usually the greater the degree of the deflection of the head, indicating a more prolonged and difficult labor resulting usually in a "persistent posterior position."

In a small percentage of cases, the head of the child remains high, does not engage, is found floating above the pelvic inlet, due to the hyperextension or disproportion of the head to the pelvic inlet. This position cannot be determined by rectal or vaginal palpation in the early stages, therefore abdominal palpation must suffice.

Some writers contend that a diagnosis of a "persistent posterior position" can most always be made early in labor. I can hardly agree, because of the variation in labor even with the normal position, it is not possible to predict the final outcome of any case of labor, but in a given case with a cervix pushed away back in the hollow of the sacrum which dilates very slowly, and when dilation is sufficient the anterior or large fontanelle is most prominent in a posterior position behind the transverse line of the pelvis, it is almost sure to remain a posterior position. When both fontanelles are found to be equally prominent and dilation must be almost complete before the fontanelles can either be palpated, with labor progressing normally, spontaneous rotation will usually occur; but if after a test of from one to two hours of labor in the second stage, there is no indications of anterior rotation, the position should be corrected either manually, or instrumentally, by rotating to the anterior position and then left to be delivered by the natural forces, or by immediate extraction with forceps as pleases the operator. Only a small minority of posterior positions will rotate anteriorly which have persisted for more than two or two and a half hours of the second stage of labor.

I do not believe, where interference is indicated, that an occipito-posterior position should ever be delivered as such, because of the ease and safety whereby the rotation to the anterior position may be accomplished, by the use of the forceps. Spontaneous delivery will rarely occur with the occiput posterior, as a posterior position, except the pelvis is large and roomy, a small head and the presence of strong and effective pains.

I mention Cæsarian section in this connection only to condem it as a method of treatment. Unless there are indications other than the occipito-posterior positions; as contracted pelvis, disproportion of the head, or hemorrhage from a premature separation of the placenta, etc., it should not be considered as a method of treatment.

The management of occipito-posterior positions should begin with the first signs of labor, and the most important factor in the treatment, because of the duration of labor, especially the first stage, is conservation of the mother's strength. The greatest danger during the stage of dilatation is exhaustion of the mother. This may be prevented by the proper use of analgestics. I prefer morphine and scopolamine, continued in sufficient amount to relieve pain up to the beginning of the second stage, or within two or three hours of delivery, then inhalation analgesia or anesthesia may be substituted. Some prefer sodium amytal or morphine alone, or with atropine. Rectal analgesia is prefered by some and may be used to advantage if the patient is in a hospital, it not being so convenient to use in the home. The patient should be kept quiet and free from baneful stimuli, such as bright lights, noises or conversation. This is very hard to carry out, especially in the rural communities Another thing that is practiced by lay members, also by some doctors, when things are not going well is to have the patient walk the floor in order to increase the pains. How much more efficient service the attendant can render his patient, if he will only give sufficient analgesics to relieve the pain and secure to the patient rest; usually dilatation progresses more rapidly with analgesia than without it in these cases. This does not mean narcosis, or enough drugs to stop the progress of labor. The act of pulling, or bearing should not be permitted until after the beginning of the second stage. Personally, I do not believe that the act of pulling, or tugging at something, or more especially at some one else, is very essential to the favorable progress of labor, and should be discouraged except possibly in the terminal stage of the labor. Patients are a great many times exhausted by being encouraged to pull, or bear down for hours at a time when they should be resting.

Every precaution should be taken to prevent the rupture of the membranes until after the cervix has become completely dilated, as the premature rupture of the membranes is not only a more frequent occurrence in the posterior than in the anterior position, but labor is very greatly retarded by the loss of the wedge-like action on the cervix, and soft parts, causing a condition of dry labor, a complication which is not pleasing in the least in any presentation. The early rupture of the membranes may also invite infection by extension from the cervix into the uterine cavity, the intact membrane being a barrier against infection; also it may lead to exhaustion of the child from long continued retraction of the uterus.

Interference, or attempted delivery, is seldom indicated, except in emergencies, until the end of the first stage of labor. In the prolonged first stage, if analgesics are not given in sufficient quantities to control the pain, the attendant is apt to yield to the appeals of the patient and family, and interfere too early. The cervix should be completely dilated, and retracted back over vertex, unless there should be signs of exhaustion of the mother or child, due to the long continued labor from an unyielding cervix. These conditions being present, it is necessary to make a choice of procedure, whether or not it would be best to dilate the cervix manually, and do a version, or rotate the head and deliver with forceps, or do a Cæsarian section. Personally, I would prefer to dilate, and do a podalic version. A section would be the easier way I am sure, but there are a hundred and one things that can happen following a Cæsarian section, viz., adhesions, illius, peritonitis, rupture of the uterus in future labors and what not. If the uterus should be retracted until version would not be safe, and danger of infection too great for a section, then it might become necessary to do a high forceps. I would consider the high forceps much more dangerous than podalic version, and should be eliminated as a method of treatment in occipito-posterior positions except in extreme emergencies.

The question arises whether or not at the present time is there sufficient signs, or has there been given sufficient signs to indicate a failure of rotation as to justify interference. Is the fact that the posterior position continues to be a serious problem, due to unsatisfactory methods of delivery with a lack of standardization, or is it due to an unsound policy as to the question of interference on the one hand and watchful waiting on the other? It is just as important to select the proper time for delivery as it is to select the proper method of delivery. The watchful waiting policy should possibly be limited to the first stage, or the stage of dilatation. For an attempt at delivery through an undilated cervix is unquestionably hazardous. Then on the other hand waiting too long after the onset of the second stage of labor to interfere, may be equally as hazardous. There is probably as much, or more, damage done, especially to the child, from waiting too long as there is in interfering too early, the too early interference resulting more often in injury to the mother, as well as the child; therefore, it is the opinion of most writers that non-interference in the first stage of labor is the safe procedure, unless there is an emergency either in the interest of the mother or the child, and that an early interference in the second stage, when there is no indications that the posterior position will rotate anteriorly in due time, should largely reduce the bad end results attributed to this most troublesome abnormality. There will be very little signs of exhaustion of the child at this time unless there should have been a premature rupture of the membranes allowing the uterus to retract upon the child; neither will there be but little signs of exhaustion of the mother if the first stage of labor has been properly managed—that is, giving the mother rest when needed.

Having determined the time for interference, then the question arises, which is the best and safest method? This should be determined by the conditions present, or the one in which the operator is best trained.

I feel safe in saying that one in every three cases of vertex presentations is a posterior position of the occiput at the beginning of labor, and that about 70 per cent, or even more, of this number will easily rotate to the anterior position without interference, or with very little assistance. The remaining 30 per cent which we may term "persistent occipito-posterior positions," will require some method of assistance, either version, manual rotation, or rotation by the use of forceps; then to be left to deliver by natural forces, or immediate forcep extraction, the choice of which will be left to the operator.

It is estimated that from about 3 to 5 per cent of all posterior positions are found at the end of the first stage of labor to be still floating above the pelvic inlet, engagement has failed to take place, due to what most writers term, deflection of the head; others contend that pelvic deformity, or a condition sometimes designated as swayback, in the mother, causing the over extension of the head by the child entering at a different angle, the forces of the uterus being directed against the symphysis instead of into the pelvic straight, this causing the dystocia rather than the deflection alone. When the head is found high and not due to too great a degree of disproportion of the pelvic inlet, from contracted pelvis, or oversize of the head, or a retracted uterus from long continued labor, in which the turning of the child would be considered too hazardous, a condition which is rare when the patient is completely relaxed by anæsthesia, then "podalic version" is the operation of choice.

I think it best not to attempt a high forceps delivery except in extreme cases of emergency, and that the delivery should never be completed with the head in the posterior position. High forceps delivery is positively dangerous both to mother and child, and delivery of the head in the posterior position by high forceps may cause irreparable damage to the mother as well as intra-cranial injury to the child. It should be considered an inexcusable error to attempt to deliver a head in the posterior position, as a posterior position is so easily rotated anteriorly by the use of forceps.

It will be observed that there remains about 25 per cent of these cases of which we have termed "persistent occipito-posterior positions," which will require some form of assistance in order to deliver in due time. If it were possible for all who practice obstetrics to be able to adapt themselves to the proper use of forceps, I am sure this would be the best method to use universally, as with the manual method, there are certain number of cases in which it will fail and forceps delivery must be resorted to. There is probably less danger in manual rotation, if it is accomplished within the pelvic cavity than is with any other method, but too many times the maneuver fails and forceps must be used as a last resort.

Before proceeding with either of the maneuvers it is, of course, necessary to prepare the patient as for any surgical operation. The patient should be completely anesthetized, and the soft parts should be manually dilated, especially in a primipara, so as not to interfere with the subsequent delivery. Make sure of the diagnosis by introducing the hand into the vagina and palpating the posterior ear. If manual rotation is attempted, the first object is to secure flexion. This may be accomplished by introducing the hand, preferably the left hand for right posterior position and the right hand for the left position, grasp the back of the head with the four fingers pointing toward the posterior ear, and the thumb toward the anterior ear. The occiput is then pulled down, to secure flection, while the entire head may be raised, but not out of the pelvic cavity as recommended by some, but merely to disengage the shoulders if they have descended into the inlet. Then rotation is begun by first pulling down on the occiput and pushing upward on the bregma, at the same time attempting to pull the occiput forward in front of the transverse diameter, discontinue anesthetic, holding the head in this position until the pains bring about further rotation. In case of uterine inertia, two or three drops of pituitrin may be given. When rotation has been completed the head must be held in position until the pains have fixed it in its new position, else it will revert to the posterior position again. The method of raising the head up above the pelvic brim and rotating to the anterior position, or all the way around to the opposite anterior position, as recommended by some, is not in my opinion a wise procedure, because of the danger of prolapse of the cord. A version would be the better method, as there would be no greater danger of infection in the latter than the former. Many of these cases will rotate with only a little assistance, which may be accomplished by digital pressure with the tips of the fingers making pressure on the bregma to secure flexion and at the same time attempting rotation.

When manual rotation succeeds there is practically no risk to either the mother or child, but a number of these cases cannot be rotated by the manual method.

Until comparatively recent years rotation has not been included among the properties, or functions of the forceps. Scanzoni devised a method, in 1865, whereby rotation and traction were the principal features. It was after him that the original Scanzoni maneuver for the treatment of the occipito-posterior position derived its name. But rotation in these instances was doubtless imparted to the head by twisting the handles of the forceps, for it was not until later that Tarnier brought forth the idea of sweeping the handles of the forceps through a large circle to effect rotation of the head within the pelvis. This form of traction with a spiral twist was not popular very long, and as a consequence of many serious injuries to the pelvic floor attributed to this operation, the Scanzoni procedure fell into disrepute.

Dr. Bill, of Cleveland, has proven unmistakably, by his so-called "Modified Scanzoni Maneuver," that the forceps can properly and safely be used as a rotator, and that in this respect it is often superior to the hand in that the blades do not displace the head as do the hands. The forceps is but an extension of the hand to the obstetrician, and should be used as such in the performance of his art, much as the surgeon uses his scalpel, or the writer his pen.

The technique of this maneuver, when thoroughly understood, is neither difficult nor dangerous. Properly executed it provides not only a beautiful obstetric maneuver, but also a means by which may be avoided many of the unhappy results accredited to this position of the head.

It is necessary first that the attendant be familiar with the use of instruments, and that all of the conditions governing the use of forceps be present, the cervix completely dilated and retracted over the head. The head should have passed through the pelvic inlet. The exact position should then carefully be determined by palpating the posterior ear if necessary.

The choice of forceps will rest with the operator, but the solid blade forcep is more probably suitable for this work, for the reason that introduction and withdrawal is easier, rotation smoother, and the likelihood of injury to the soft parts not so great. (Personally I have always used the Simpson Forceps.) The use of the Kielland forceps in Europe is almost universal, and they are recommended by a few writers in this country, especially by Bacon, of Chicago, who claims that no other forceps will suffice. The advantage claimed is that they may be applied to the head in such a way that they will not have to be removed and reapplied as in the "Modified Scanzoni Maneuver." DeLee applies the forceps as in the ordinary position, pushes the head upward slightly in order to loosen the impaction, then by a twisting motion rotates forward for a small distance, readjusts the forceps and rotates again, this maneuver being repeated several times until rotation is complete.

The following steps are necessary for delivery by the Modified Scanzoni Maneuver, of the occipito-posterior position, a method which I have been using for the past few years, and is by far the best method that has yet been presented for the management of this quite often difficult condition, in my opinion.

First: there should be complete dilatation of the cervix; the fetal head should be down in the pelvic cavity; the membranes ruptured before the application of the forceps; thorough manual dilation of the whole birth canal below the head to eliminate possible resistance to subsequent delivery. The first application of the forceps is made as in the left anterior position, except that in this position the pelvic curve of the forcep is directed to the face of the child. Before locking the forceps the handles should be depressed in order to bring the blades more in line with the ovid; the forceps are now locked and raised toward the opposite groin of the patient. This maneuver favors flexion of the head. Without any traction the handles are carried around in a large circle so that the handles first point toward the groin of the patient; next, toward the thigh; and last almost downward toward the floor. With this sweep of the handles the blades of the forceps do not deviate from the same axis during the process of rotation and the fetal head turns with them with the use of very little force on the part of the operator. Rotation should be continued until the occiput lies directly under the symphysis. Unless this is done the occiput is likely to drop back when the forceps is removed for reapplication. If the patient is under complete anesthesia, the anesthetic should now be removed, slight traction made and allow the returning pains to fix the head in the anterior position. The forceps are now removed and reapplied as to any normal anterior position. Then proceed with the remaining steps of delivery as in any other normal forceps delivery in the anterior position.

SUMMARY

Occipito-posterior positions are still considered a serious complication of pregnancy, and rightly so, unless properly managed.

An early and accurate diagnosis is a most important factor in the proper management of this malposition, both in the interest of the mother and the child.

Refrain from interference in the first stage of labor, except in extreme emergencies; early interference in the second stage when there is no indications of spontaneous rotation. Only a small minority of posterior positions will rotate anteriorly after two or two and a half hours second stage labor.

Podalic version is indicated when the head remains above the pelvic inlet at the end of the first stage of labor, unless too great disproportion exists between the size of the pelvic inlet and the head of the child.

Cæsarian section should not be considered as a method of treatment in the posterior position, when the position alone is the only complication, or abnormality.

Manual rotation is to be considered a safe procedure, provided the head is not lifted up out of the pelvic cavity, but this maneuver often fails and forceps must be supplied.

Forceps rotation, by the modified Scanzoni maneuver, should be the method of choice, because of its ease of application, if the method is once understood, and the comparative safety to both mother and child, when properly executed.

There should be no lacerations of the soft parts attending this maneuver, except in the subsequent delivery, provided there is no traction made while the head is being rotated. Laceration of the perineum and soft parts should be no more extensive than a forceps delivery on an anterior position.

DISCUSSION

DR. R. C. NEWKIRK (Tiptonville): I think you have listened to a very excellent paper on the subject of occipito-posterior position. There are a few points the Doctor brings out that I think should be emphasized. The first one is early diagnosis. This does not only hold good for persistent occipito-posteriors, but for any other type of obstetrical case. The earlier you can make your diagnosis, the better shape you are in to handle your case. There is no question in my mind but that the way the first stage of labor is handled is responsible for more tragedies than any other obstetrical problem.

In my opinion, the day is past when pituitrin should take the place of analgesia. A number of years ago pituitrin was the first thing a doctor used when he saw his patient. That wasn't so many years ago, either, and many doctors use it yet, before diagnosis is made.

The handling of the first stage of labor should begin when the patient first goes into labor, probably with scopolamine and morphin—that is, if it is to be a vaginal delivery. When the effects of these drugs have passed, follow with smaller dose of morphin, later with ether oil. This works very successfully, and it will surely work in occipito-posterior delivery.

I have seen a number of good men fall down on the diagnosis of this condition because they were unable to put themselves in the position of knowing exactly where the head was. Any time you can get as much as two-finger dilatation—or maybe three; it depends upon your hand, of course, as well as the condition of the pelvis and the position of the cervix—you can palpate a posterior if you have your patient under enough analgesia. This is a very important point.

I think there are probably some indications for interference in the first stage of labor in posterior occiput presentation. One of those is dry labor extending over a long period of time. Another is an intermittent heart rate in the baby. With four fingers dilatation, a No. 4 Voorhee's bag will assist you very nicely, and is by far less dangerous than a manual dilatation, which is probably one of the most dangerous operative procedures in obstetrics today, and up until a few years ago was practiced as much as anything.

There is an article by Dr. Bill, of Cleveland, in the October issue of *Obstetrics and Gynecology*, in which he says the time to interfere in persistent occipito-posterior is the beginning of the second stage of labor. He has a series of 500 cases reported in that article which are very interesting from this standpoint.

The methods of procedure are three. One is manual rotation, which, if conducted properly, probably is the easiest of all. It cannot always be done, as the Doctor stated, but it can be done in most cases if you will take your time and get the shoulder dislodged.

Next, with floating heads, if the second stage has continued over too long a time, you will probably have some Bandl's contracture ring. It may not be marked, but you will have some; and if the second stage has continued very long, you will have a marked ring probably. If you try to do an internal podalic version with this complication, you are in great danger for both mother and baby. I saw three cases last year brought into the hospital, and I saw some beautiful operations conducted under the technique of Dr. Potter, probably as pretty an operative procedure as is done in obstetrics today.

Next is the Kielland forceps or the Scanzoni modified, which probably are the two methods of choice over the country today. The Kielland is a very beautiful operation, and is a very successful one, done by men who know how to handle the Kielland forceps. There are two methods of applying Kielland forceps—one, turning over the first blade, applied just under the symphysis; the second blade is applied posteriorly as any other blade; the other, the straight, direct application of the Kielland forceps, the same as in any other type of delivery. This has one advantage in that you do not have to remove your forceps to complete delivery. I have seen some cases in which, when the Scanzoni modified operation was done, the operator went back to put on his forcepts the second time for the delivery, and found, to his sorrow, that the head had rotated back. This was due, of course, to the fact that the head was not brought completely under the symphysis before the forceps were removed.

DR. MILTON SMITH LEWIS (Nashville): From the standpoint of frequency of occurrence, difficulties encountered, and the responsibilities involved, there is no condition more important than the occipito-posterior position. It is of so much importance that it demands to be kept before the profession until we better understand how to cope with it. The condition is most perplexing, often most troublesome and difficult, and not infrequently results disastrously for both mother and baby. The condition is often overlooked, not diagnosed, and labor is allowed to drag on with little progress until in desperation the attendant is obliged to do something.

Dr. Vinsant has given us a most comprehensive paper on the diagnosis as well as the management of this condition. There are one or two points in the diagnosis that I would like to emphasize. One is the ability on vaginal examination to palpate both fontanelles. Also if you are able to palpate the occipital protuberance, you can be almost certain that you are dealing with an occipito-posterior position. The progress of labor gives us another insight into the diagnosis. Particularly when the pains in the first stage are irregular and not strong and with practically no progress, always bear in mind a posterior position. Especially is this true in the right-sided babies, and all such cases should be considered occipito-posterior position until otherwise proven.

Management: The first stage in posterior position should always be handled in the most conservative way. Vaginal examinations should be limited and the patient's strength preserved by sedation and forcing of fluids. If the bags of water have ruptured early, then the use of a Voorhee's bag is definitely indicated, as Dr. Newkirk has advocated.

It has been my experience that a very considerable majority of posterior positions will spontaneously rotate and do not require operative interference. We should not set any time limit for interference. The mother's and baby's condition is the best indication for interference. Personally I prefer to let the patient continue in labor as long as she is making progress and as long as the fetal heart is all right; for the lower the head comes into the pelvis, the easier will be the manual or forceps rotation. But after a reasonable time if the head is in the mid-pelvis and rotation has not occurred, then my choice would be a manual rotation, which consists of going in with the whole hand and grasping the head with the fingers spread as far apart as possible. With the patient thoroughly relaxed under chloroform or ether anesthesia and by aiding with the outside hand on the posterior shoulder, the occiput is brought to the front. You can then deliver by an easy forceps.

In those cases where dilatation is complete and where the occiput has not or has only partially entered the brim of the pelvis, then version and breech extraction serves a very definite place in the management of the posterior position if there is no pelvic contraction.

A word about the modified Scanzoni maneuver. Rotation of the head with forceps is a procedure which may be entirely safe in the hands of the expert, but this procedure is one which should not be advocated as the delivery of choice for the average physician. I think we should approach these cases with an open mind. Use whatever method you can do best. But individualize by all means.

DR. J. C. AYRES (Memphis): I want to say at the outset that I am very agreeably surprised at this paper. I qualify that statement by saying that we who have been in the game for many years remember when we used to attend medical society meetings, and on every program for ten or fifteen years was the abuse and the use of obstetrical forceps. Following that for probably a decade was the subject of the management of the occipito-posterior position. Every man had a new method for the management of this condition, which led us all finally to conclude that there was no specific management for it. There is an old axiom in medicine that a condition that has too many remedies has none.

The essayist in this particular case has approached the subject from an entirely different angle. He finishes his paper by giving the method found best in his own hands. The paper is a work of art in that it gives you the artistic handling of a case.

He used one expression that in its literal sense should be taken out of our discussions of obstetrical cases, and that is the expression "watchful waiting." His theme was entirely away from watchful waiting. You would not expect a football player to win a game by watchful waiting, and yet you would expect that football player to be able to understand signals and to act on the signals. His activity should not be that of watchful waiting.

It seems to me that the answer to occipito-posterior position is given in the first part of the essay—the diagnosis, and along with it full knowledge of the physiology and anatomy, which are included in the one expression, "mechanics of labor." If you understand thoroughly the mechanics of labor of all of your positions, and then are able to diagnose not only the position, but the amount of flexion, the shape of the pelvis, the kind of pains, the shape of the head, your management of the case will be an artistic job rather than a scientific one.

DR. C. C. VINSANT (Maryville): I don't know of anything further to say on the subject, except to offer a little apology. When I completed my paper I found that I had a paper that took me a little better than thirty minutes to read. Two or three days ago I received a program which said that we were allowed only twenty minutes, and I cut out a lot of my paper in order to get through in that time; so I left out some points that I did not have time to recondense. I left out some points that I should have liked to stress.

I also want to say to you that I am not an obstetrician. In the little town of Maryville we do not have a regular obstetrician. My principal work is surgery, but somebody there has to do the difficult cases, and I have been trying to do them. That is how I came to be interested in this subject.

I want to thank you gentlemen for your hearty discussion.

MESENTERIC ABSCESS COMPLICATING TYPHOID FEVER*

REPORT OF A CASE

ALBERT G. KERN, M.D., F.A.C.S., Knoxville

THIS case was referred to me by Dr. R. B. Wood, who on October 8, 1931, examined the patient and his examination was as follows:

Mrs. P. R.

C. C.—Easily exhausted.

Evening Temperature.

Illness began two weeks ago with a feeling of general malaise and a slight backache, neither of which was sufficient to interfere with routine duties. There are no other complaints even on questioning regarding different systems.

P. N.—Patient has had very few childhood diseases, and has enjoyed good health as a whole. A tonsillectomy and an operation for acute appendicitis have been her only operations. She is married, with one child three years of age. There were no sequelæ to childbirth nor to her operative procedures.

F. H.—Patient is an only child, father living and well. Mother died of tuberculosis when patient was a child.

P. E.—At three P.M. temperature was 101, pulse 90 and respiration 18. The patient is slightly anemic, of a general tired appearance, eyelids drooping, with no Edema.

Examination of the eyes, ears, nose and throat was normal.

Thyroid not enlarged.

Chest: Symmetrical expansion, measuring approximately three inches.

Lungs apparently normal.

Heart is normal. Blood pressure 105/80.

Abdomen shows slight amount of gaseous distension with a scar in right lower quadrant. There are no signs of herniation. Slight tenderness is present beneath the scar and over descending portion of colon. Skin apparently normal except for appearance of anemia.

Pelvic examination made before operation revealed a mass in the pelvis. More marked on left side. It was fixed and very tender to the touch.

There is no glandular enlargement.

Reflexes normal.

Laboratory:

URINE

Yellow. Cloudy. 1.005. Alkaline. Sugar negative. Albumine faint trace. One pus cell to every H. P. F. Large number of epithelial cells.

BLOOD

W. B. C. 9,500. Poly 77. Lymph 22. Eosin 1.

WIDAL

Typhoid three plus aggl. Paratyphoid A. & B. negative.

Undulant fever negative.

Diagnosis: Typhoid fever.

Subsequent course:

Patient was put to bed and observation revealed normal temperature until about three P.M. when a rise of 101-102 was noted. The course was uneventful and no change was noted except a persistent temperature. In early November a re-check still showed 3 plus typhoid aggl. and a negative undulant. In the latter part of November the R. B. C. was 3,550,000. Poly 86. Lymph 14. W. B. C. 14,600.

In early December the temperature still persisted, with negative urine and blood showing a 4 plus aggl. for typhoid with a gradual rise in leucocyte count. The last of December a mass was noticeable on palpatation in left lower quadrant, which on bimanual examination appeared to be continuous with the uterine mass, but which was located mostly to the left of median line. Leucocyte count at this time was 19,550 and poly 88 per cent.

The patient was sent to Fort Sanders

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*Read before the Tennessee State Medical Association, Memphis, April 12, 13, 14, 1932.

Hospital December 11, 1931, and was operated on under gas anesthesia.

A lower midline abdominal incision was made.

On opening the peritoneum a small amount of serous fluid escaped. The omentum was found very much thickened and of a firm to 'a hard consistency. It covered a mass which occupied the lower left abdomen and the pelvis and was densely adhered to the surrounding intestine and to the uterus. After separating the omentum the mass was found to have originated in the lumbar lymph glands and mesenteric lymph glands of the lower part of the ileum. The latter was kinked and twisted and adjacent loops adhered to each other to such an extent that almost complete obstruction to the intestinal flow was produced.

After freeing the adhesions of the coils of the intestine from each other and from the pelvic organs, the primary mass was found to be composed of agglunitated smaller masses between the mesenteric folds. The larger of them was the size of one's fist and was of a fluctuating consistency. The intestine and peritoneal cavity were walled off with sponges and the area incised. About three ounces of thick creamy yellow pus, which had a faint sweetish odor were evacuated. Cultures and smears were made of this pus which proved later to be negative for bacteria.

A second mass the size of a hen's egg was shelled out from between the folds of the mesenteric attachment to the lumbar spine. On gross examination the specimen measured 7.5 cm by 4 cm by 3 cm. The capsule was greatly thickened and of a glistening white color. The consistency was soft. On section the cut surface was of a pale flesh color with numerous yellow spots varying in size from 5 mm down to 2 mm scattered completely over the surface. These spots projected slightly above the surface and on pressure a thick yellow pus exuded from them.

After removal of two smaller glands a cigarette drain was packed into the abscess cavity and another placed in the pelvis. The omentum was then brought down to cover the whole area.

An ileostomy was then made above the twisted and deformed intestinal loops in order to prevent intestinal obstruction.

Subsequent laboratory study of the pus and infected lymph glands did not reveal bacteria. Microscopic study of the tissue merely showed a marked lymphoid hyperplasia with necrosis and suppuration.

Post operatively—the patient's recovery was slow. For five days her temperature was of a septic character. On the sixth day the morning temperature reached normal with an afternoon rise to 100 3/5 which continued for 15 days. For the next eight days the morning temperature was subnormal with an afternoon rise to 99 3/5. Thirty-six days after operation patient was permitted to return home but still had an afternoon temperature of 99 degrees.

For the past four months the patient has made a very slow convalescence until about three weeks ago when she was able to be up and go around the house. When weather permits she spends most of the time in the open air. About six weeks ago it looked as it another abscess was forming in the right iliac fossæ but this has cleared up. I am still apprehensive at some later date that I will be confronted with an intestinal obstruction.

I am reporting this case because of the rarity of such an occurrence and because of inability to find very little literature on the subject. Most textbooks merely mention the involvement of these glands in typhoid fever. A few describe them as being enlarged sometimes to the size of an English walnut and their occasional suppuration. Thomas Clifford Albutt, of the University of Cambridge, described this condition in his 1896 System of Medicine more completely than any literature I could find published since that date. He described a case very similar to this one, in which the tumor reached such a size that an intestinal obstruction was produced. He also said the gland may suppurate; the pus may burst into the peritoneal cavity, causing peritonitis, or it may become inspissated and sometimes forming a calcreous mass. Fungl in 1887 reported a case in which a suppurating mesenteric gland near the cæcum caused perforation of the superior mesenteric artery and death from hemorrhage.

Frankel, 1887, records a case of suppurating mesenteric gland causing an abdominal abscess four and a half months after the fever.

Michie, 1888, Thompson, 1882, Low, 1881, and one or two others about this time reported cases of mesenteric abscesses following typhoid fever. William Osler reported a case from Montreal General Hospital in 1877.

I have been unable to find any literature on cases of this nature written since 1899.

REFERENCES

Albut System of Medicine, 1896 Edition.

Frankel, A.: Cited by Hare. Verh. Kongress fur inn. Med. 179, 1887.

Hare, H. A.: The medical complications and sequelæ of typhoid or enteric fever. Phila. Lea, 1899.

Klein: Uber die pyogene Wirkung des Eberthschen Bacillus bei Typhuskomplicationen. In. Diss. Bonn. 1898.

Lehman, F.: Zur Kenntnis der Atiologie von Eiterungen in Verlauf von Abdominaltyphus. Centralbl. f. klin. Med. 12:649, 1891.

Low, B.: Abdominal abscess as the result of enteric fever. Brit. M. J. 2:122, 1881.

Michie: Abdominal abscess following enteric fever. Brit. M. J. 1: 1388, 1888.

Neudorfer, A.: Uber Typhus abdominalis mit eines Falles von Eiterbildung in den mesenterialen Lymphdrusen. Tubingsn. 1889.

Osler, W.: Extensive Abscesses in the Mesentery following typhoid fever; (etc.) Montreal General Hospital. Path. Rep. (1877). 1878, i, 65-71, also; Canada M. & S. J., Montreal, 1877-8, vi, 256-261.

Thomson, G. W.: Abdominal abscess following enteric fever. Glasgow M. J. 17:244, 1882.

DISCUSSION

DR. E. G. WOOD (Knoxville): I think that Dr. Kern is to be commended for two reasons especially—in the first place, that he has had this experience with a case about which classification nothing has been in the literature since 1899. In the second place, I think Dr. Kern is to be congratulated upon the diagnostic work, the laboratory work, the careful history, the operation, and the post-operative follow-up in this interesting case report.

I wonder, when we have such a case report and only a few similar case reports in the literature, whether it is not a fact that there are more such cases present in the practice of physicians and surgeons. I am wondering whether or not some of these cases that we have been in the habit of calling reinfection, if you please, of enteric fever after a normal or a practically normal temperature has been reached, running another course of twenty-one or twenty-eight days, may not be an infection of mesenteric or lumbar or ileocæcal or cæcal glands. To me it seems at least that is food for thought.

You know that the superficial cervical or lymph glands located in various portions of the body that are visible to the eye and palpable to the touch run courses of long duration. Therefore, why should not these deep-seated glands that run these long-continued temperatures be of a similar nature?

This patient, if you please, had run a temperature for two weeks before she was first seen by the internist and then ran a course of two months or more from October 8 to December 11, and then was operated for the mass.

The question of diffenential diagnosis might be thought of in these cases. The diagnosis of typhoid is already present, but could not a similar condition be had, say, of intestinal obstruction from some other cause? Dr. Kern reports that this patient practically had a partial obstruction at the time of operation, from pressure against the intestine.

If this mass had been more on the right side than on the left and this patient had not had a previous appendectomy, there certainly would have had to be considered the question of appendicitis as an additional differential diagnostic point. The increased polymorphonuclear count, the increased blood count, would have been indicative of appendicitis.

By the way, a third factor that might be considered is the question of tuberculosis, because in tubercular conditions we certainly have an enlargement of the mesentery glands and glands of different areas complicating tuberculosis.

Though we may go many years without hearing another case report of this nature, I think it is well worth the Doctor's efforts in bringing us this very interesting and very rare condition.

DR. JARRELL PENN (Memphis): If you will pardon me for digressing from the strict subject of Dr. Kern's paper, I would like to mention two cases that I think are of sufficient interest to justify discussion under this subject of typhoid abscesses. The first of these we saw some five or six years ago, and I am not as familiar with that history as I am with the second, which is more recent, so I will mention the second case first.

A lady 47 years old called at the office with a painful swelling in the lower third of her left tibia. She gave a history of having had an attack of typhoid fever twenty-two years ago, at which time she had a painful swelling at the same location. It became fluctuant and ruptured spontaneously, and the abscess drained for a few weeks or months. It healed, and since that time she has had numerous recurrences of the swelling. However, it has never ruptured again. An X-ray at the time of our examination revealed an abscess in the marrow of the lower third of the tibia. It was opened and saucerized according to the method of Albee. The interesting points in this case are: The abscess contained the same type of thick yellow pus that Dr. Kern found in the mesenteric abscess. Upon culture we obtained a pure culture of typhoid bacilli twenty-two years after the initial attack. Culture of the stools and urine also were positive for typhoid bacilli. I am not positive whether she has had typhoid bacilli in her tibia for twenty-two years or whether it was reinfected from the stool or urine.

The second case is very similar to the first, in a young man who had an abscess of the tibia, in which we obtained a pure culture of typhoid bacilli eighteen years after an attack of typhoid fever.

DR. A. G. KERN (Knoxville): I had another case, but there was a very poor history taken on it, and at the time I operated on it I didn't know anything about the mesenteric abscess. It was a case from which I removed a calcareous mass about the size of a pigeon egg. It was covered within the mesentery. I am going to try and get a better family history, and see if there was any previous typhoid infection.

I want to thank you for the discussion.

MY EXPERIENCE WITH PROSTATIC RESECTION*

George R. Livermore, M.D., Memphis

HAVING been a firm believer in the Young and Caulk punch operations for median bar hypertrophy of the prostate gland and having used the Collings Electrotome in conjunction with the punch operation on numbers of cases with bilateral hypertrophy of the prostate with most encouraging results, it was only natural that I should give the new procedure of prostatic resection my whole-hearted support.

Stern really deserves the credit for developing the instruments and technique of prostatic resection, but on account of the severity of the hemorrhage following its performance, it did not meet with favor. To Davis, however, with his inventive and mechanical genius, we owe a debt for having made possible the safe use of a method, which though surgically satisfactory was too dangerous to be practical.

To McCarthy, too, with his creative ability and indefatigable and untiring energy, we owe the perfection of an instrument which makes prostatic resection the operation of choice in all prostatic obstructions except the very large bilateral intravesical and intraurethral hypertrophies. As our technique improves, it may soon be possible to relegate prostatectomy to the scrap heap. That it is not the simple, free from danger procedure that some have led us to believe, is evidenced by the fact that McCarthy himself states that prostatic resection is no operation for the beginner, and in order to perform it correctly, one must not only have a thorough knowledge of the anatomy of the bladder neck and prostatic urethra, but must be an accomplished cysto- and urethro-scopic operator as well. The patient, too, must be prepared with the same degree of care and preparation as for the operation of prostatectomy. In other words, they must undergo a preparatory stage of treatment consisting of catheter drainage, urinary antiseptics, forced fluids and such heart and general tonics as may be necessary in order that a thorough check of the cardiovascular-renal systems may show tests within the margin of operative safety.

Both the Davis and the McCarthy units are equipped with the cutting and the coagulating currents. The cutting current is used to resect the obstructing lobes and the coagulating current to control the bleeding which at times may be severe. In our earlier work we were annoyed by hemorrhage, and in one case rather excessive, due (as Caulk in his punch operation has so correctly stated) to the use of a small retention catheter which became occluded by blood clots with resultant tenesmus and very severe hemorrhage. Another point, too, is that all hemorrhage should be controlled, with the coagulating current, before the patient leaves the operating room.

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*Read before the Tennessee State Medical Association, Memphis, April 12, 13, 14, 1932.

The operation as now performed is as follows. Under sacral and synergistic anaesthesia (in the very nervous individual, gas or ethylene anaesthesia may be used, and it is remarkable with what ease and safety they may be administered following synergistic analgesia) the McCarthy pan endoscope is introduced and the topography of the bladder neck and posterior urethra carefully outlined. The loop electrode is then passed and the intra urethral lateral or bilateral lobes are resected. This allows the intra visical lobes to come more prominently into view and these are now resected. The loop is drawn from behind forward and the piece of tissue removed is either consumed by the current if moved slowly or brought out with it, if moved rapidly. (It may come out with the water later). If there is marked bleeding, the coagulating current is applied to control it. I have noted, and McCarthy and Folsom have also observed it, that often where there is hemorrhage following the removal of a piece of tissue, if another piece is removed from the same area, the hemorrhage may cease. If it does not, it may easily be checked by the coagulating current.

After completing the operation, it is wise to inspect the operative field to see if all projecting nodules have been removed and all hemorrhage controlled. The pan endoscope is then removed and a No. 24-F soft rubber retention catheter with two extra eyes cut in it, inserted and held in place by adhesive strips. Hexamethylenamine tetramine gr. xxxi is then given intravenously and twice a day thereafter for five days, as this usually prevents postoperative rigors and high fever. Hexamethylenamine tetramine gr. vii ss to x is also given by mouth four times a day. The catheter is removed on the third or fourth day.

When the catheter is removed, the patient usually voids freely and easily. It is a fact, however, and you no doubt have noted it, after catheterization or the passage of a sound, free voiding does not always take place and even complete retention may occur. The reintroduction of the catheter and (we now put in a smaller one, usually a No. 18-F) for 12 to 24 hours. When it is removed the voiding is quite satisfactory. After a week or ten days there may be the passage of more or less blood due to the separation of the slough from the burned area. This is usually of no consequence, but when marked as evidence by frequency and the continued voiding of blood and clots, the large No. 24-F retention catheter must be replaced, and if this does not control it, the coagulating current should be applied to the bleeding area.

It is safest and less annoying to the patient to check the hemorrhage promptly as the greater the loss of blood the greater the likelihood of other complications. Epididymitis is a rare sequel. We have had only one case. Catheter drainage in the preparation for operation does predispose to it and we have had three cases develop it during the pre-operative decompression. In elderly men who are poor risks, and in those who are very nervous we make it a rule to ligate and sever each vas before doing resection. This is almost 100 per cent preventative, I say almost, because it is 100 per cent preventative in all cases except those in whom infection has extended to the epididymis before the ligation and severing is done. When it occurs after ligation, and I have only seen it once, and this following prostatectomy and not resection, it is of such minor consequence that it causes little or no inconvenience.

It is remarkable how little suffering and discomfort follows resection of the prostate. Occasionally, however, the catheter causes some irritation, with tenesmus and a frequent desire to void. In such cases, the Urotropin should be discontinued at once. Morphine or Codeine may be necessary at first, but under the administration of tincture of belladonna, tincture of hyoscyamus and santal oil or methylene blue compound pills, the pain, tenesmus and urgency soon subside and the patient is relieved.

From your experience in catheterization and the passage of sounds, you know how often such procedures are followed by rigors, high fever and sweats. It is therefore reasonable to suppose that the passage of the cystoscope and the removal of large pieces of tissue from the bladder neck would be followed by even more severe reactions than the simpler manipulations. This no doubt would be true except for the fact that we have a preventative for these untoward reactions in hexamethylenamine tetramine administered intravenously in doses of thirty-one grains twice a day. This has proved so effective in our cases that we now use it routinely, not only in prostatic resections, but also in all urethral and bladder instrumentation. By this means we have reduced such disagreeable sequellae to a minimum.

Prostatic resection is a marked improvement as compared with prostatectomy in suffering, expense and time. Prostatectomy usually requires from four to six weeks in the hospital followed often by a urinary fistula that may require several months and even excision of the fistulous tract before it heals, while for resection the stay in the hospital is from four days to a week and the pain and suffering are usually so mild and so transient and the danger so slight, they cannot be compared with those of prostatectomy.

Are the good results of prostatectomy permanent? This can not be answered positively as too little time has elapsed since the first resections were done. However, Davis now has records of cases done more than four years. We know, too, that prostatectomy is often followed by contracture of the bladder neck and even recurrence of bilateral hypertrophy after prostatectomy has been repeatedly reported. Two by Kretschmer in April, 1931.

This new method has every advantage when compared with prostatectomy and even if it does have to be repeated early or late, it is so much simplier and so much less dangerous (no death has been reported), so much less painful, so much less likely to be followed by complications, most of us would rather have several resections than one prostatectomy. I feel, too, as we become more proficient in the performance of resection, the necessity of repeating it will become almost nil.

Conclusions: (1) Prostatic Resection should be the operation of choice in the majority of cases of hypertrophy of the prostate. (2) Hemorrhage is the chief danger and should be controlled at the time of operation. (3) Hexamethylenamine tetramine intravenously gr. xxxi twice daily markedly reduces postoperative reactions. (4) The good results of prostatic resection have already been proved and time and further experience will only extend its usefulness.

BIBLIOGRAPHY

McCarthy, J. F.: Suggestions as to procedure in the use of the McCarthy visualized Prostatic Electrotome. Urol. Jour., Vol. xxvii, No. 2, February, 1932.

Folsom, A. I.: My Personal Experience with Trans-urethral Prostatic Resection. Urol. & Cut. Review, Vol. xxxvi, No. 3, March, 1932.

Davis, T. M.: Davis Method of Prostatic Resection. Urol. & Cut. Review, Vol. xxxvi, No. 3, March, 1932.

Kretschmer, H. L.: Recurrence Following Supra-pubic Prostatectomy. Trans. Chicago. Urol. Soc., Vol. I, 1931.

Livermore, Geo. R.: Prostatic Resection a Distinct Advance. Urol. & Cut. Review, Vol. xxxvi, No. 3, March, 1932.

DISCUSSION

DR. HENRY DOUGLAS (Nashville): We have been interested, like everyone else, in this type of procedure in enlargement of the prostate, and we have done about eighteen recently in Nashville. The instrument that I have used has not been the McCarthy or the Davis. I have followed the work at the Mayo Clinic and am using the so-called Braasch-Bumpus resectoscope. That instrument coagulates the tissue before it is removed and thereby prevents hemorrhage.

I don't think this operation is quite as easy as it seems to be. We have tried it on patients that heretofore we would have operated on, patients with enlargement of both lateral lobes and the median lobe, and in some instances it has taken forty-five minutes to an hour to get enough tissue out to relieve the situation. The obstruction in the ordinary cases can be relieved satisfactorily by this method at one sitting. In the larger glands it may be necessary to repeat the procedure. When the instrument can be withdrawn into the posterior urethra to the level of the verumontanum and from there you can look into the bladder cavity without obstructing prostate intervening, the operation is complete.

I am partial to this particular instrument because it does control bleeding pretty well, not entirely, but the remaining bleeding is controlled by fulguration. The needle is inserted into the gland before the bite is taken, coagulates it, and practically controls the bleeding. A few bleeding points may be left over which can be easily controlled. It takes out relatively large amounts of tissue at a time and the work, I think, can be done faster with this than it can be with any of the other instruments I have seen.

There is one other thing to which I should like to call your attention. We have had some trouble with infection following this operation, pyuria and cystitis. When I was at the Mayo Clinic two or three weeks ago, I found that they were putting these patients on the so-called ketogenic diet, which is high in fat and low in carbohydrates, in order to produce acetone and diacetic acid in the urine. When ketosis takes place it is remarkable how fast the pyuria clears up. My understanding is that they are using that at the present time as a routine. It certainly does control the infection in many cases.

DR. JOHN L. JELKS (Memphis): I don't want to discuss the operative technic here, but I think there is something you gentlemen have skipped in the preparation for such operation. The Doctor spoke of synergistic analgesia. Gas, it seems to me, in any pelvic operation of this character, should be unnecessary. Gas increases the tendency to hemorrhage and to congestion. To make the synergistic analgesia more satisfactory, I have used routinely for years, in addition to the morphine, a twenty-five per cent solution of magnesium sulphate, as was referred to so much by our beloved and departed Frank Smythe, Sr. But one hour and a half before your operation is begun, the routine administration of ten to fifteen grains of chloretone (the crystals) on the tongue, and water q.s., and about forty-five minutes before the time for operation ten grains more administered in the same manner, will do one thing that is important; it will relieve that psychic tendency; your patient will go to the operating room and to the table and remain on the table in a somnolescent state. He doesn't care—that's the idea, and you are less liable to have shock, while gas given during the pelvic operation, as I said, increases the tendency to hemorrhage.

DR. RUSSELL A. HENNESSEY (Memphis): Mr. President, and Members of the Society: There can be little doubt in the minds of those of us who have used this method of transurethral prostatotomy that it will revolutionize prostatic surgery. In a broad sense its best application may be said to fall into three large groups: (1) as a prophylactic procedure in early enlargements of the prostate of any variety; (2) as a palliative procedure in a poor surgical risk in whom surgical removal cannot be accomplished with safety; (3) in the malignant obstructive prostate it has been our experience that no procedure heretofore suggested has given such uniform and satisfactory results. Not only is the success of this procedure to be credited to the skillful design of the McCarthy resecto-scope, but in a large measure to the development of the undamped cutting current supplied by the McCarthy unit. With it, resection of tissue can be accomplished with a minimum of desiccation, obviating subsequent scar formation at the site of resection, and permitting an opportunity for an accurate and undistorted pathologic study of the removed tissue.

It has been shown by some pathologic investigation of the sections removed with proper technique that the depth of the tissue destruction varies between one-fifth to one-half millimeters. A few slides will demonstrate this one important factor.

Presentation of slides, showing pathology of resected tissue and minimum of desiccation.

We feel, then, that as a consequence of the very small amount of tissue destruction, the bladder neck will resume somewhat of a normal anatomical makeup, and that distortion from subsequent contraction will thus be obviated.

DR. GEORGE R. LIVERMORE (Closing): In answer to Dr. Jelks with reference to synergistic analgesia, nitrous oxide is not used unless the patients are old and very feeble and afraid of an operation. Sometimes we give them gas simply to have that nervousness that he speaks of, that dread, disappear. If we can avoid that the patient will stand the operation much better. We are afraid of the hemorrhage because we have the coagulating current to control it. The main thing in the control of the hemorrhage is to stop it at the time of operation. The only trouble I had was in a case where I didn't stop it completely and I didn't use the large catheter. If you get plugging of the catheter you are going to get hemorrhage. If you use a large catheter, a No. 22 or 24-F, you rarely have any trouble at all.

THE MODERN TREATMENT OF BURNS*

ROBIN F. MASON, M.D., F.A.C.S., Memphis

MY only justification for writing on this ancient subject is its commonness and the fact that there is no standardized treatment so far as one can observe.

Burns are unquestionably the most commonplace of traumata, and yet the profession doesn't present a solid front in its mode of treatment, as it does in acute appendicitis, for instance, or a fractured bone.

Some men are sticking to ointments, some to wet dressings and some even to sunlight as the best treatment regardless of location, degree, etc., of burn. I do not wish to be construed as meaning that all burns should be handled in exactly the same way, but I do wish to convey that there are certain well founded principles upon which treatment should be based, which if followed out will be found useful in all manner of burns, and which if ignored, will eventuate detrimentally to both patient and doctor.

It makes no difference whether a burn be caused by fire, electricity or chemicals, the same principles of treatment hold good in all alike.

For purposes of treatment, burns need be classified in but two degrees:

First: Where there is no skin destruction.

Second: Where skin and subjacent tissue have been partially or totally destroyed.

When the former is the case, the treatment is negligible unless a very large area has been burned, in which case the treatment is symptomatic. On the other hand, where tissue has been destroyed, the treatment may be simple or most complicated.

The chief enemy with which we have to deal, is, beyond question infection. This it is that produces toxemia, prolongs convalescence and disfigures for life. It is responsible for most of the deaths as well as complications that arise, and up to now no way has been devised to prevent its inevitable appearance in some degree. So it becomes evident that the treatment of burns in large measure means the prevention and treatment of infection.

In order to discuss treatment intelligently it is necessary to first speak of some of the complications which may arise. In order of their appearance we have the following:

First: Shock.

Second: Toxemia or anhydremia.

Third: Infection.

Under infection comes: (a) secondary hemorrhage, (b) secondary anemia, (c) duodenal ulcer, (d) cancer.

Of the three great complications, infection plays the major role in morbidity and also disfigurement, except where there is great actual loss of tissue.

From the above we see that treatment resolves itself into two phases—the first directed to the patient and the second to the actual burn.

The treatment of shock is familiar, or should be to all, so I shall not dwell on it, but simply say that the actual burn should be considered very little at this time and all attention should be directed to saving the patient's life, as in any grave injury. In regard to the treatment of the second complication, call it what you will, coming as it does within the first 48 hours, all are agreed as to the treatment, namely, the necessity of filling the patient, by all means available, with saline solution, often as much as 6,000 c.c. within 24 hours' time.

It has been an accepted theory with our profession for many years that this period of edema, delirium, high temperature and rapid pulse, followed by drop in blood pressure, subnormal temperature, failing pulse and death, in unfavorable cases, is due to absorption of toxin generated in the burnt flesh and rapidly absorbed into the circulation. But now comes Underhill of Yale, who seems to show conclusively, by animal experimentation, that there is no toxemia, no toxin having been found, and that if present it would probably be harmless, because there is practically no absorption from a burnt surface. He shows that lethal doses of strychnine injected beneath burnt skin has no effect on the recipient, one way or another.

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*Read before the Tennessee State Medical Association, Memphis, April 12, 13, 14, 1932.

He does find, however, that there is a great loss of fluid, probably plasma, from the blood stream where large surfaces are burned, bringing about an anhydremia or concentration of the blood.

In a burn one-sixth the body surface as much as 70 per cent of the blood fluid volume is lost to the circulation. This, he contends, is the cause of the symptoms of so-called toxemia.

This concentration is generally recognizable by the high hemoglobin values of the blood and high red cell count and the index of successful treatment is a fall in the hemoglobin content and count which is always accompanied by an amelioration of the patient's symptoms. There is also a loss of chlorides, which necessitates the use of saline solution.

Fortunately for the patient, both schools agree that there is a blood concentration and that saline and yet more saline is the remedy. The treatment of infection begins with the treatment of the burn itself and will be considered along with that phase.

Since all open burns become infected, it follows that the best treatment is the one that most quickly restores the lost integument. This may be called a first principle.

For superficial burns I know of no remedy superior to the tannic acid treatment, devised by Davidson and first published in 1925. It not only shuts out infection by coagulating the albuminous products of the exudate, and thus prevents absorption to a great degree, but renders the toxins harmless by precipitating them (Davidson). In addition it splints the part and almost at once relieves the pain. It acts in exactly the same way that a splint does on a broken bone or a dose of morphine does in shock, it produces or contributes to physiological rest. So physiological rest may be set down as a sine qua non—in the modern treatment of burns.

In facial burns it is not so good, especially in men, because the hairs of the face get caught up in the crust and are pulled. Often too, the patient cannot open eyes or mouth satisfactorily. I prefer the open air treatment in these cases, alternated with an occasional hot saline pack to clear away the debris.

For deep burns the tannic acid treatment is unsatisfactory, because the deeper structures cannot be satisfactorily sealed off, and as a result our old enemy, infection, comes along and burrows in under the crust. We then have the bad situation of infection without drainage. Tannic acid, however, is our best ally in local treatment of burns, and is far better in every way than the ambrine of a few years ago, which has fallen into disuse.

We feel that the long period of sloughing accompanied by its toxemia, anemia and depression is the thing that most prolongs convalescence. Removal of the slough by mechanical means has never been satisfactory in our hands, so we have abandoned it.

It is the firm belief of the writer that maggots could be used to great advantage in this stage, if patients could be properly guarded against other infections and could be convinced that the remedy is not worse than the disease.

It is well known among army surgeons of the Great War that the wounds of men who lay out long enough to become infected with maggots usually were well debrided when found and healed kindly.

At all events, if this period could be shortened the real cure could begin quickly and treatment would not be so long drawn out. This brings us to the subject of grafting and plastic measures. Grafting after the method of Thiersch is most commonly used, because large areas can thus be covered quickly and the donor spot is left undisfigured. In view of the fact that this type of graft makes skin of poor quality, whole thickness grafts are preferable.

Whole skin grafts, however, have the disadvantage of being harder to grow and are smaller. They should be used, though, wherever practicable, on account of furnishing a more flexible and less vulnerable covering and because they are less subject to cancerous degeneration. All grafts should be autogenous, because homogeneous grafts do not do well. It is possible, though, that when body chemistry is more fully understood we may learn how to use them.

It may be laid down that when properly cut autogenous grafts are used they will, for the most part, take, unless the patient is suffering from one or more of the following complications, viz: infection, anemia or syphilis. Therefore it goes without saying that these conditions must be dealt with, if present, before success can crown our efforts.

There is nothing like a whole blood transfusion to revive a sickly graft.

Grafts should not be placed upon high granulations, because they will not be sufficiently nourished. Where the patient is not anemic or the burnt area great, these granulation should be curetted down to the basement membrane before applying grafts. When the patient is anemic and blood loss cannot be well borne, it is best to shrink the granulations, with hypertonic saline solution used as a wet dressing. I have found it useful at times to use seed grafts of whole skin, burying them deep in the granulation tissue. This method has the advantage of holding the grafts in place, so that they will not come off with the dressings. More recently I have used tunnel grafts of whole thickness with the greatest satisfaction.

Normal horse serum sprinkled on grafts frequently will increase the speed of growth.

The detailed treatment of denuded joints is too voluminous to be incorporated in this short paper, but the principles are few—and not simple. In these cases it is imperative that whole skin be used. It is only in this way that a thoroughly mobile joint can be obtained. This can be accomplished by flaps taken, where and as the inventive genius of the surgeon shall dictate. Where whole skin is used as a transplant, perfect asepsis and coaptation of skin to defect is imperative. Position plays no small part in the ultimate condition of a joint, so it should be seen to by the surgeon himself that a given joint is so placed and moved about that it will not be irretrievably ruined. Here let me issue a warning against doctors turning burnt patients over to internes or nurses for treatments. Internes and nurses are very desirable people but they are not versed or experienced in treatment and only disastrous results can be expected where they are in complete charge.

A word about burn cancer: Celsus probably first noticed the development of cancer in burns, and again Marjolin in 1828 published his description of ulcer developing in scars, which description was so perfect that this type was and is called Marjolin's ulcer.

Dupuytren, in 1839, reported the case of an enormous cancer in a Belgian, which arose on the scar of a burn, and just recently Treves and Pack of the New York Memorial Hospital reported 2,465 skin cancers, 28 of which arose from burn scars. Some of these cancers, six to be exact, were acute wound cancers occurring within one year of the injury and in small superficial burns. The average age of these six patients was 52 years. These cancers made their appearance before the wounds healed. Not one of the entire 28 burns were grafted, but allowed to heal naturally.

This is another reason for rapidly covering raw surfaces with skin and not letting nature take her course without some directing on the part of the attending surgeon.

In the 22 cases that developed chronic scar cancer, the average age of the scar was 32.5 years, while the age of the average patient was 53.5 years. The average time of healing of six of these cases was 805 days.

I am merely reporting this case in order to show the changes that occur in the red blood cells following extensive burns.

CASE REPORT

C. J., colored, male, age 31 years.

Struck by lightning, 7-1-31.

Diagnosis: Second degree burns over entire body with the exception of legs, which were burned to fourth degree. The following are red blood cell counts and hemoglobin estimation made about every three hours for the 48 hours following the injury.

7-1 R.B.C. 10:30 P.M. 5,020,000 Hg. 95
7-2 R.B.C. 12:30 A.M. 5,080,000 Hg. 95
7-2 R.B.C. 6:30 A.M. 5,070,000 Hg. 97
7-2 R.B.C. 9:00 A.M. 5,900,000 Hg. 98
7-2 R.B.C. 11:00 A.M. 5,750,000 Hg. 95
7-2 R.B.C. 2:30 P.M. 5,090,000 Hg. 95
7-2 R.B.C. 4:30 P.M. 5,120,000 Hg. 97
7-2 R.B.C. 7:30 P.M. 6,120,000 Hg. 95
7-2 R.B.C. 9:30 P.M. 6,150,000 Hg. 97
7-2 R.B.C. 11:00 P.M. 6,100,000 Hg. 97
7-3 R.B.C. 1:30 A.M. 6,000,000 Hg. 98
7-3 R.B.C. 3:30 A.M. 6,150,000 Hg. 97
7-3 R.B.C. 5:40 A.M. 6,105,000 Hg. 98
7-3 R.B.C. 2:30 P.M. 5,880,000 Hg. 95
7-3 R.B.C. 5:30 P.M. 5,950,000 Hg. 95

The blood count being about down to normal we discontinued daily counts, however, on:

7- 6 R.B.C. 4,560,000 Hg. 87
7- 6 R.B.C. 4,650,000 Hg. 95
7-13 R.B.C. 3,540,000 Hg. 80
7-16 R.B.C. 4,150,000 Hg. 88

During this entire period his urine showed albumin 1 plus, which was the only change noted. His temperature ranged from 100 degrees on admission to 104 degrees just before death.

His treatment consisted of administration of from 5,000 to 6,500 c.c. of normal saline solution given under the skin daily in addition to fruit juice and water by mouth.

His condition was good until the thirteenth day, at which time his R.B.C. count was taken and found to be only 3,500,000. He was immediately given a transfusion of 500 c.c. of whole blood which improved his condition to some extent but was unable to stave off the inevitable and he died on July 20th, nineteen days following the accident.

TREATMENT

The local treatment throughout was tannic acid 5 per cent. This case demonstrates the fact that we will probably never be able to save all cases of burns, regardless of improved treatment, as the human frame is only capable of enduring a certain amount of punishment. On the other hand this case holds the record for longevity in the Memphis General Hospital, in patients suffering from such an extensive burn.

There is no question in the writer's mind but that this man would have died within one week's time if he had not been given the enormous amounts of saline solution noted above.

SUMMARY

1. Burns are common and of great social and economic importance.
2. They should be treated vigorously and carefully.
3. Always take Wasserman.
4. Physiological rest, ample fluids and restoration of lost integument quickly are the most important steps in treatment.
5. Do not forget the value of blood transfusion.

REFERENCES

Treves and Pack, S. G. O., Dec., 1930, Vol. LI, No. 6.

Davidson, E. C.: S. G. O., Feb., 1929.

Montgomery, A. H.: S. G. O., Feb., 1929.

Montieth and Clock: J. A. M. A., April 6, 1929.

Underhill: J. A. M. A., Sept. 20, 1930.

Keller: Archives of Surgery, July, 1928.

DR. J. W. BODLEY (Memphis): Mr. President and Gentlemen: A paper like Dr. Mason's can't go by without discussion. It is excellent, but like all of the modern innovations that have come to civilization it has the canker that we have to deal with. Particularly the one thing I wish to criticize destructively to the paper and later will give constructive elements that I think it warrants, is the danger of turning loose to the untrained the use of tannic acid. According to Moorhead, the primary treatment of the burn should be to eliminate the possibilities, so far as possible, of infection. He uses a boric acid solution. It makes very little difference what that solution is, whether boric acid or saline, so long as it keeps the part freely draining and free from the absorption of the so-called toxins. In other words, I believe that rather than removing the toxin, it opens the pores and still allows the elimination of the secretions of the body. Therefore, where you block with tannic acid you obstruct the elimination of the natural secretions which carry off the poisons of the body rather than accomplish the elimination of the toxins of the burn, which I do not believe exist, except dying, infected flesh.

Dr. Mason has restricted or limited the use of tannic acid to superficial burns, and where that is done it possibly has advantages. However, the old treatment which Dr. Mason intimates is antiquated, that of ambrine, is still a preferable treatment. It is easily obtained, practically as easy as your corner drug store can give you five per cent tannic acid; it is easily applied; it does not need the spray and all of the apparatus that is advocated, but an ordinary small camel's hair brush applies your ambrine, melted in the water bath very easily, then the application of sheet cotton, and over it another layer of ambrine. It comes off without removing any of the new tissue. The scar or burn may then be irrigated with Dakin's, which does not hurt the patient, which removes the exudate, and then it is dried and the reapplication of the ambrine made. This should be done in the beginning once or twice a day, later once a day, and finally every other day.

Recently we had twelve burns in an explosion of one of our local industries, and those that died in the first twelve hours were the fatalities, with the exception of one who died from a gangrenous leg from a crush. The rest recovered, and to date they have had no skin grafting, no limitation of motion by scar tissue, and have no scars that show as deformities.

As far as the rest of the treatment of the burns is concerned, I wish to commend the attitude that Dr. Mason has taken, and to reiterate that the primary treatment with great quantities of fluid, preferably saline, also the use of glucose intravenously, and blood transfusion, is absolutely essential to the recovery of these cases. I think that we lose track, possibly, of the treatment of burns by the advocation of plastic surgery and early skin graft. I have noticed that a number are treating not by tannic acid, but any solution to take out the first burn, and then using a block graft or some other form of graft to heal the burn, which leaves a marked cosmetic deformity even though it gives a quicker recovery so far as their work is concerned.

I appreciate listening to this paper because I think Dr. Mason has given us something that is most worth while, but I do think that we should rather be conservative with the promiscuous use of tannic acid.

DR. ROBIN F. MASON (Closing): We have here the old question of disagreement in regard to treatment. Disagreement is a good thing and is possibly the greatest cause of progress in medicine. With regard to ambrine, which was the best remedy we have had until recently, the trouble was that it required too much paraphernalia. It is all very well for the Doctor to say you can take a camel's hair brush and paint ambrine on the patient. You can if you can hold your patient. It is a very painful procedure. We used that a great deal during the war, and I have never seen the patient who didn't resent it.

Tannic acid is available anywhere that there is a drug store. The only thing about the use of tannic acid is that it must be fresh.

I have never seen any danger from the use of tannic acid. I have used tannic acid in enormous burns, and if there is any danger I have not seen it.

The objection to the use of a wet dressing is that it does promote absorption, the very thing, as I see it, that you want to prevent. Davidson, at the Henry Ford Hospital, quotes a long series of cases in which he shows that he can run the patient's temperature up and down with wet dressings. When he puts on the wet dressing the absorption is increased and the temperature goes up.

In regard to skin grafts, I cannot see any objection to skin grafting where it is necessary. There isn't any treatment on earth that is going to prevent scar formation if the skin is sufficiently and deeply enough burned, because it has to be replaced by something and the only thing that replaces it is scar. Up to the second or even the third degree, under Dupuytren's classification, you naturally get off with a small scar formation, but beyond that you have to put skin there or nature will put a scar.

"GLAUCOMA"*

J. R. HAMILTON, M.D., Knoxville

THIS paper is intended as a plea for earlier and more accurate diagnosis of this condition. Primary glaucoma accounts for better than 1 per cent of all eye diseases (Duanne & Fuchs), and all glaucomas account for a relatively much higher percentage of the blindness in this world. It seems that this blindness reaches cases that might be saved, or at least arrested if timely and true diagnosis were made. We are all interested in this subject, not only as taxpayers, but as physicians, and you might be interested as a relative some time, as the first case I report is that of a kinswoman.

Glaucoma may be said to be a name applied to several varieties of a diseased process—in a diseased eye, oftentimes in a diseased body. Glaucoma is both insidious and relentless. The three cardinal symptoms of this disease are: (1) increased intraocular tension, (2) blurring or loss of vision, and (3) inflammation. Just which or how many of the above symptoms are present depends, of course, upon the stage of the disease. We like to classify glaucoma into (A) primary and (B) secondary, this latter type following some injury, eg., and then following any or all of the steps of the primary type. For that reason the secondary type will not be discussed until case No. 2. The primary type is divided into the (1) acute and (2) the chronic, with all the intermediary steps. The exception to the above classification is the infantile form, occurring at birth or during the first year of life, and this difference is due to the fact that the sclera in the infant is extensible, while the adult sclera is rigid and only expands at the lamina cribrosa. The infantile type may stop spontaneously or may continue on to blindness. It is rare and characterized by striæ in the cornea from the rupture of Descemet's membrane. Every individual in the State of Tennessee who proposes to treat or tend eye conditions should at least be familiar with the cardinal symptoms of glaucoma in any stage of the disease. This holds alike for the senior medical student and for the M.D. who graduated forty years ago. It is no highly skilled trick to palpate an eye globe and at least tell that all is not well; it only takes three or four seconds. Any M.D. should know enough about eyes so that a patient or acquaintance (as is often the case) says, "Doctor, my eyes are failing, there seems to be a 'skim' over them," or "I see spots." Any M.D. should know enough to advise that patient to see some one competent to care for them, and not do as the laity do today, say, "It sounds like 'cataract'; I'd just wait until it's 'ripe' and then see a specialist." Who among you have not heard of that fatal advice? The patient later showing up for operation on his supposed "cataract," and it is pitiful how willing all hopeless cases are to be operated on. It seems that it should be easy to differentiate the acute type from iritis (with the forefinger and history, or else not treat it), or erysipelas, or neuralgia. The dilated, inactive pupil, steamy, insensitive cornea should help enough to separate them. We like to think of glaucoma as a disease of advanced life. As we grow older, the globe becomes smaller through sclerosis and dehydration of the tissues, while the lens grows through life and, according to Priestly Smith, becomes too large for the eye. Thus we have a mechanical feature contributing to the possibility of glaucoma, as well as other factors, such, for example, as focal infections. There are so many different causes of glaucoma (like of rheumatism) that no one explanation will suffice for all. Wilhelm Wegner (arch f, augenh Dec. 1930), Schmidt & Seebeck (using the Marx method) say that the capillary endothelium is affected in 70 per cent of their cases by even as low as 50 grams of distilled water in chronic inflammatory glaucoma and simple chronic glaucoma, thus tending to prove or confirm the view that glaucoma is a general disease factor, eg: as age. P. Bailliart (Bul. Soc. blge. d. opthl. 61; 18, 1930) says further that high-blood-pressure patients have often a normal ocular pressure, sometimes a slightly lower. (2) The glautomatous do not all have hypertension, and at times one encounters acute glaucoma in patients with low blood pressure. Yet in many cases of chr. glaucoma we do find arterial hypertension. Therefore, we should be on guard if we find a patient with hypertension who complains of "mists," dark or bright "spots," visual eclipses suggesting a disturbance of the occipital and retinal regions. Abnormal elevation of the retinal pressure compared to the diastolic pressure is a grave sign and suggestive of nephritis. Dr. E. L. V. Brown (University of Chicago) says the fact that the pressure on the globe does not entirely efface the tension in pathological hypertension suggests either a lessening of the permeability of the envelopes of the eye or an increase in the hydro-lymphatic nature of the contents of the globe; further, the fact that the tension is a glaucomatous eye goes higher than it was originally after putting pressure on it (250 grams for 5 minutes) may be due to the increase in production of the cilliary body—an exaggerated dialysis, or because of the greater osmotic and colloidal pressure of the newly formed aqueous. Allowing a Schiotz tonometer to remain on the corner two mintes will show a slight decrease of pressure in a normal eye, no change in a glaucomatous eye.

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*Read before the Eye, Ear, Nose and Throat Section of the Tennessee State Medical Association, April 12, 13, 14, 1932.

Prognosis and Treatment.—Before Von Grafe courageously did his iridectomy in 1856, all glaucoma ended in blindness. So it is today, any factor that contributes to non-treatment (whether it be false diagnosis or what) adds to the number of blind and dependent we have in our State. Treatment may be either medical or surgical. In the majority of cases an operation is needed to check the disease. However, if the patient is of high mentality so as to be depended upon to keep up miotics all the rest of his life, drugs may suffice. In acute cases, eserin salcylate (1-4 gr. to oz.) often acts promptly. Sometimes the pupil will not contract under its influence. Pilocarpine hydrochlorate (2-5 gr. to oz.) may be better tolerated in milder cases—a drop or two every hour until relieved. If this does not occur, iridectomy or one of its substitutes should be performed. Dionon (5 per cent) is a lymphagogue and an analgesic, with adrenalin chloride (1-10,000); watch later, as it has a tendency to arise intra-ocular tension in some eyes; and if Wass is 4 plus, rapid and competent administration of neo-salversan is indicated. Massage of eyeball with finger tips O.K. in all types. Last, but often most important, remove any possible foci of infection, as bad teeth or tonsils. Iridectomy in simple glaucoma is sometimes without favorable end results, because the case is systemic, as is our first case to be related now.

1. Mrs. C., age 58. First noticed that her eyes "jumped" in 1928, and then a little later felt like there was a "wisp" of hair over her eyes, which she would endeavor to wipe away. Then one day she noticed vision in right eye was failing. She consulted a specialist in EEN&T, and he changed her glasses. Whether any pathology was discernible; if so, whether he found it or not, we do not know. He told her she would be all right. Eyes continued to fail more and more; so consulted another specialist, and he told her he did not know what her trouble was and suggested a specialist in a distant city, who did a classical Elliott operation and assured the patient that she would be O.K. Patient returned home with a steadily growing dimness in the operated eye. Consulted one of her old specialists, who told her now that she had what might be a cataract some day. This patient has a tension of around 26 in the operated eye most of the time and 40 in the unoperated eye, which has been blind since the beginning of her trouble. There is no degeneration in the lens that can be seen. The vitrous is loaded with opacities, and patient

has very badly diseased tonsils. This patient is now blind.

The second case is that of a white man, age, 34, who received a blow in the right eye while at work in a neighboring city (treated by company doctor). This patient suffered considerably, first, from corneal ulcer; secondly, glaucoma. This doctor is a recent graduate of a good medical school, and should be better prepared than this. Patient stated that he wanted to come to a specialist, but this general practitioner assured him that he was doing all that a specialist could do, and that the company would not pay for it if he came. Consequently, patient delayed a few weeks until attacks of pain became unbearable. Tension 78 (Schiotz). Patient wanted globe removed, as he had suffered so much. He was found to have pyorrhea 43 and diseased tonsils. Put on pilocarpine 2 per cent and adrenalin. Pain and tension subsided. Teeth and tonsils out. Iridectomy (down and in) was done. Patient now has 20/65 vision. Tension 18.

Third case (colored). "B," age 40, had been having trouble with his eyes failing for the last eight months, so that he consulted an optometrist in our city. Had his glasses changed twice at his expense and once at the optometrist's expense. So he has had four pairs of glasses in the past year. Examination of eyes revealed tension OD 58, vision O, cupping complete, OS tension 32, vision 20/100, 3/4 cupping, and could hardly see to get in and out office. He also complained of sore throat. Due to suggestive appearance of throat, a Wass was taken which was 4 plus. Patient was put on pilocarpine 2 per cent, and neo-tension (after three shots of neo) OD 34, vision O, OS tension 24, vision 20/65, or industrially blind.

Here are three rather typical cases illustrating false diagnosis—the first one seen and treated by three specialists, the second case seen and treated by a general practitioner, and the third by an optometrist. I am of the opinion that the first case might have been saved (whether or not you agree with me that glaucoma is a general disease as well as local). If some one had viewed those tonsils with distrust and courage enough to have removed them, there might have been a different end result. The second case was in all probability lost due to false diagnosis. The last case most likely could have been arrested if neo had been given in time.

We cannot change the world completely, but we might change our part of it a little; and if for no other reason than to keep down our burdensome taxes, we should be interested. Then we should be better doctors. And I am glad that this meeting is being held in Memphis, if you men of the medical faculty will see that each senior at least knows not to treat eyes that have an elevated tension (to the forefingers), pain, etc., with atropine. And, of course, it seems unpardonable to fit one pair of glasses right after another without some one competent to determine why. It seems that we are losing too many eyes. If we could impress each senior with some slogan or forewarning so that each one would have in mind the possibility of glaucoma and blindness in the occasional case that he runs across, we could cut down this unnecessary loss of eyes in many of our cases of blindness. Just what could be done about the optometrist, I do not know, unless we in some way educate the public so that they will demand better training before risking their eyes. However, some of our M.D.'s seem to be just about as ignorant as the optometrist, who knows practically nothing at all. There are some exceptions. We might put forth a little effort when the opportunity affords itself and spend a little time teaching the younger members as the oath of Hypocrates suggests; and if each one of us would take time to teach a doctor friend simple palpation of the eye with the forefingers, we might save an eye per doctor each year. Who knows?

DISCUSSION

T. LYLES DAVIS, M.D., Chattanooga: Six out of every one hundred cases entering the oculist's office are those of glaucoma. Glaucoma causes one-fourth to one-third of all blindness after middle age; so it behooves all of us to be on the alert.

At this time there is an increasing demand for the early recognition of glaucoma. We all realize that the earlier treatment can be established the more satisfactory are the results. On the other hand, if we delay our diagnosis or treat for some other condition, valuable time has been lost and irreparable damage has occurred to the affected eye. Fuchs, one of the greatest authorities, states: "Its accurate recognition is of the greatest importance to the practitioner—the more so because here prompt and proper therapeutic interference can save everything, but a false diagnosis and improper treatment may destroy everything." Unfortunately, we are constantly getting cases of glaucoma which have been incorrectly diagnosed and which come to the opthalmologist only when irreparable damage has been done and help is no longer possible.

Glaucoma is more common in the presbyopic period, and we should regard those who find it necessary to change their glasses frequently as glaucoma suspects. Again, it may be the first visit, and the patient may, and generally does, give a history of having had several unsatisfactory refractions in a short period. [1]"Usually he has from two to five or more pairs of glasses with him. If these corrections should be neutralized chronologically, it would most probably be found that the distance correction was increased a quarter to a half dioper each time. Upon questioning these patients we find that no attempt had been made to take the fields of vision either peripherally or centrally, nor any attempt made to ascertain the intraocular hypertension. We should regard all such patients as potential glaucomas, at least until proven otherwise, and needless to say that this cannot be done on one observation.

"When a patient tells us that he has difficulty reading at night when he has had a satisfactory correction within a reasonable length of time and that he has difficulty entering buildings from outdoors, we should not pass up the history as a whim of the patient, but should give it some consideration. In this history the patient is unconsciously giving us his light differential. With a history like this, we only need a photometer as a means of confirming the symptoms. There is a very simple method of estimating, in a relative manner, this particular aspect. Granting that with a perfect refraction and with the proper addition for near that the patient is able to read the finest print on the test card, but when the room is darkened to such an extent that the examiner is barely able to read the fine print and the patient cannot, or even the next size type, we have a relative estimate of his light differential, of course excluding other pathology. The same may be accomplished with the Williams railroad lamp for testing color perception. If we all had the means, space and time to afford a light differential apparatus, we probably would be surprised to find the number of older patients who have reduced light differential. This does not necessarily mean that every reduced light differenital is an incipient glaucoma, but it does mean that glaucoma should either be ruled in or out of the case. Reduced light differential is one of the earliest symptoms of impending glaucoma.

"Central vision is a poor index upon which to work in preglaucoma. Central vision is too many times retained even when the disease has progressed over an extended period of time. However, when the patient retains good central vision until late in the disease and that vision then starts to become impaired, the progress is rapid in spite of medical and surgical treatment. Many times a patient will be able to read 20/20, but he will tell us that he does not see it clearly, or a part of the line on the test card is clear, but the rest of the line disappears. Here again the patient is unwittingly hinting to us that he has a possible paracentral scotoma."

Special distinction has been made between simple and congestive glaucoma. The so-called leading signs are missing in simple glaucoma, or at least they are not so conspicuous. A correct diagnosis is arrived at only through objective data, such as excavation of the optic disc, shrinkage of the visual field; whereas the congestive glaucomas present evident symptoms, such as pain, rainbows around lights, transient mists, and dilated pupils. We regard normal tension to be from 15 to 29; at the same time glaucoma may be present with a tension of 24. Yet there is tension to 38 without any injury. So what is normal, we don't know. Dr. Gradle, of Chicago, has expressed it in a sentence that is apparently correct: "The normal is that degree of pressure which the tissues of the eye are able to withstand without impairment of function."

The successful treatment of glaucoma is not only a scientific problem, but should also be considered a social and economic one. We should in some way forcibly impress on all physicians the importance of the early recognition of glaucoma.

The greatest menace to the successful treatment of glaucoma is the fact that the large majority of refractions are done by the "spectacle man," so-called optometrist, who is ignorant of the mere thought of a disease of the eye. He goes on changing the lenses from month to month; then, as a last resort, the opthalmologist is consulted, but too late for restoration of vision, as the peripheral fields are greatly contracted and there is marked excavation of the optic disc.

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[1] "The Early Diagnosis of Glaucoma," C. W. Geiger, M.D., and J. H. Roth, M.D.

NERVOUS INDIGESTION*

James L. Bibb, M.D., Chattanooga

NERVOUS indigestion may be defined as a true neurosis, the predominating feature of which is an increased irritability of gastric sensory nerves, to which are often added motor and secretory disturbances, without any definite organic lesion.

Dr. McLester, in his *Nutrition and Diet in Health and Disease,* says: "It is the most frequent form of digestive trouble." He wrote this book in 1928. It seems to me because of the depression and the widespread increase in nervousness as a consequence of the present unusual situation in the country that this disease has increased by leaps and bounds during the years of 1930 and 1931.

Cause: Overwork—physical and mental; eating while exhausted, or nervous, or discussing financial burdens or other troubles at the table; holding important business conferences, salesman trying to put over a big deal at the luncheon table, with all his faculties keyed up to the highest point.

Often there is total failure of digestion—when food is eaten under psychic strain, as at political dinners, banquets, or in homes where some loved one is very ill. Many digestive upsets which are erroneously ascribed to poisoned or spoiled food are in reality due to this drying up of digestive secretions which accompanies nervous excitement or great fatigue.

Another cause: Emotional upset, coming from correcting children at the table.

Definite Scientific Evidence of Disease

The taking of strong caustics, either through suicidal intent or from accident, or gun shot wounds, necessitating gastrotomy or enterostomy, have given research workers a chance to observe the effect of nervous or emotional strain on the mucous membrane and the motor and secretory function of the G. I. tract.

Likewise, a barium meal given to fourth year medical students while taking final examinations for their degrees, showed that nearly all the barium remained in the stomach at the end of the six hour period.

Alvarez describes a case of a woman who had no HCL following a test meal. On close questioning, he found the woman had been under a terrible nervous strain, with no sleep, her husband coming home drunk and raising a disturbance the whole night before the test. Later, when he sobered up, the test proved entirely normal. He, also, well illustrates the drying up of digestive juices and stopping of peristalsis with a history of a child at 6 a. m., off in the country, falling out of a fruit tree and breaking his arm. It was six hours before the doctor was reached, the child vomiting the fruit—under the anesthetic—unchanged by digestive juices, even the print of the teeth being easily detected.

Cameron and Britton have shown "that there are centers for the emotions in the mid-brain, and that these centers are ordinarily held under restraint by the cortex of the brain. When this is removed by decerebration in animals, or in man, by small amounts of anesthetic or alcohol depressing high centers, the emtoions of pleasure, of grief, or anger, have full control of the behavior of the individual, and much of the distressing hypersensitiveness of nervous people must be due to loss of higher cerebal contact over centers situated lower down in the brain. Just as high cortical centers are first to fail under alcohol, ether, etc., so they are the first to fail under influence of over-work, lack of sleep, and all the other causes of emotional strain."

Symptoms

Distress and pain in abdomen, flatulence, possibly constipation one time, diarrhea at another; constipation being the rule. Often the variability of symptoms—their odd nature—and other signs of nervousness, help us in diagnosis. An important thing is the fact that the symptoms are absent when the patient is entertained, or dining out, at a friend's house, and always worse after some emotional upset.

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*Read before the Tennessee State Medical Association, Memphis, April 12, 13, 14, 1932.

Increase of irritability of digestive tract results in constipation rather than diarrhea. The sphincters at the ends of the stomach and colon, which are more sensitive than the rest of the G. I. tract, become so irritable and tonic that they shut down, obstructing the progress of food and residue along the G. I. tract. Some nervous women have spasms of every sphincter in their bodies. They have pharyngospasms and complain of a lump in throat, spasms at cardia and pylorus. Constipation is often of nervous origin, and is associated with marked tenseness of anal sphincters, and is part of general tenseness of all the muscles in nervous, hypersensitive people, and this same tenseness of muscls keeps them awake at night. They simply cannot relax.

Differential Diagnosis

It is extremely important that correct diagnosis be made. A person may have some organic lesion, or be suffering for many years with organic trouble, which could easily bring on all the symptoms of a neurosis.

We must remember in middle or late life, symptoms referrable to stomach may be due to the heart, with a coronary lesion. In early life, it may be the only sign of pulmonary T. B.

With ulcer, the regular time of the pain, which is relieved by food and alkalies, together with x-ray findings, help to differentiate. If all diagnostic aids have failed to help, give the patient food every two hours. If he is relieved, you must have an ulcer, for no other disease but ulcer responds so typically to this therapeutic test. In many instances, though, we may have, as Alvarez says, "A pre-ulcer condition—that is, some nervous or secretory or circulatory disturbance which may eventually lead to a formation of an ulcer." Therefore, the importance of treating the nervous indigestion so that later the patient may be spared an ulcer. Those suffering from gall bladder disease are usually fat, badly constipated women past middle age. They have often been called "Neuros" because they belch and bloat for years, till suddenly they have a typical colic with pain under the right rib margin, running back to shoulder, nausea, vomiting, with appearance next day of yellow conjunctiva, and tenderness in epigostrium and right hyperchondrium. Of course, x-rays, after the use of the dye discovery by Graham and Cole, with gall bladder not visible, tells the story.

Many times, pain and tenderness in the lower right quadrant have given rise to the unscientific, erroneous, diagnosis of chronic appendicitis, when the true trouble is an irritable spastic coecum, giving rise to "Belly Consciousness" in this area.

Much is being said now about the irritable, unstable colon, and this same bowel may show at various times or in various parts at the same time delay or hypermobility, atony or spasm. Often we have the syndrome of alternating constipation or diarrhea.

Here the cause is often nervous instability, combined with an improper diet. We have no digestive ferment to handle cellulose, as the herbivora. Bacteria in coecum and colon does this for us, and often it is done very poorly, especially if one has a short, irritable, spastic colon. Therefore, these people cannot handle roughage—just the very thing they have resorted to because of a foolish fad, or, as often happens with women, they eat mainly fruit, salads, and green vegetables because of the fear of obesity.

Colon mal-function is always made worse by the use of cathartics and enemas. As Kantor says, "The laity still feel that the colon is not a definite, important part of the digestive tract, with two definite functions to perform. They erroneously think that the colon (1) is a sewer to be emptied as often and as thoroughly as possible, (2) that the retention of waste matter in the body over twenty-four hours is a very harmful thing, and something must be done about it, (3) that several large, mushy stools are normal or beneficial, (4) that many common symptoms, as headache and vertigo, must be treated with cathartics or enemas."

It is normal for many people with large roomy colons to have three bowel movements a week.

Symptoms: Constipation and diarrhea are frequent. In these cases, as Kantor says, the abdominal nerve plexuses seem to be very irritable and sensitive, causing every movement of gas or feces to be registered as a painful sensation—giving rise to the frequently heard term, "Belly Consciousness."

Pain after eating often occurs in colon trouble, because of the ileo-pyloric reflex. A discharge of food from the pylorus is immediately followed by the entry of ileal contents into the coecum, with increase in pressure in the colon.

TREATMENT

It has been repeatedly said recently that 50 per cent of the patients coming to a doctor's office have no real organic trouble. In these troublous, uncertain times of depression, with poverty, with men losing jobs or fear that they will lose them, with the loss of money and property, or the fear that they will lose these, is it any wonder that the "neuro," the neurasthenic or the hyperchondriac is increasing enormously? Our tendency to call them such names and then not giving them the attention they need and really deserve, is making many enemies for our profession and helping all of the quacks and cults.

Let's quit telling them not to worry, but rather delve to the bottom of their troubles, showing them by our sympathy, understanding and real friendliness that we want to help. Often much good is accomplished by giving the patient the mental purgation (intellectual catharsis of Freud) that comes by pouring out all their secret fears and worries to a sympathetic and understanding physician. If loss of job, debt, poverty, domestic infelicity are the sources of the trouble, isn't it foolish just to say "Don't worry," when you and I would probably be much worse ourselves if placed in the same position? By wise advice and sympathetic understanding, we may be able to lead them out of the labyrinth of confused and disordered thoughts to the point where they can acquiesce in things that cannot be remedied and forget many other things which seemingly were so vital when they were so upset and worried.

The second great factor in successful treatment is rest—and sleep.

Often reassurance and sleep will accomplish all that is needed. The neurotic must get some relief from his disordered and confused thoughts—the less he sleeps one night, the less will he sleep the next night —and therefore, to break up the vicious circle, he must have a sedative drug. He needs, and must have, a temporary crutch —just as a man with a sprained ankle has to have one.

There are so many safe, non-habit producing sedatives now, as bromides, phenobarbitol, corbromal (bromidiethylacetyl urea)—always write on prescription "Don't refill," and instruct the patient how to gradually reduce the dose.

If the patient has "belly consciousness" with every movement of gas and food residue annoying him and with actual painful seizures, a small dose of phenobarbital, combined with atropin, one-half hour before meals, will relieve. This is especially true with irritable spastic colon.

Some "DON'TS" are helpful to these people.

Don't talk about the depression and what you consider the awful situation, at meal times.

Don't quarrel at the table. Solomon must have had nervous indigestion in mind when he said 3,000 years ago, "Better is a dry morsel and quietness therewith than a house full of feasting with strife."

Don't eat a heavy meal—when you are particularly wrought up, nervous, or much exhausted either by physical or mental work.

Don't lead such a strenuous life on holidays or week-ends—coming back to your work Monday more tired than you were the Saturday before.

If you suffer from gas pains—belly consciousness—don't eat a meal containing quantities of cellulose, roughage or bran.

Don't do heavy mental work late at night, thereby preventing what these people need more than anything else—rest and sleep.

DIET

The bland and balanced Schmidt diet, to which additional articles are added, may be sufficient. Alvarez' smooth diet, used in ambulatory ulcer cases, seems best to me—and here again, some *don't*:

Don't eat concentrated sweets, as candy.

Don't eat between meals.

Don't eat fried foods.

Don't eat too fast.

Don't eat any roughage, as bran, bran muffins, even if constipated, and since we have no ferments in the digestive tract which will dissolve cellulose—the fibrous parts of green vegetables and fruits—these with many salads should be avoided at first, if there is much flatulence. Likewise, avoid skins, seeds and gristle.

Salads containing tomatoes, celery, cucumbers and pineapple, many of the green vegetables, berries, raisins, jams full of seeds, and many raw fruits should be avoided, remembering, too, that beans, cabbage, onions and peanuts, often form large amounts of gas. An ulcer diet is especially helpful while the patient is being observed and thoroughly worked up, for if an organic lesion, as ulcer, exists, this diet will relieve. A suggested diet: Breakfast, orange juice or apple sauce or baked apple—don't eat skin, soft boiled or poached eggs, with bacon, buttered or milk toast, and any well cooked cereal (except bran mush), bread and biscuits, if the latter is mainly crust.

Lunch or Dinner: Any creamed soup, cereal or baked potato, rice, sweet potatoes, creamed cauliflower and asparagus, soft cooked macaroni and noodles and spaghetti, puree of beans, lentils, lima beans—all skins and fiber taken out by passing through a ricer—also any baked or broiled meat. For dessert, custards, Spanish cream, plain ice cream, chocolate pudding, prune whip, and plain sponge cake. Soon this diet can be increased, if no discomfort.

If constipated, prunes, apple sauce and one or two tablespoonsful of Barium, used by the x-ray man, two to three times daily, or mineral oil, is much better than eating roughage—as bran or green vegetables—which can easily upset a short, poorly functioning, unstable, irritable colon, increasing flatulence and distress. If constipation is due to excessive irritability, with spasticity, often nerve sedatives and atropine will relieve.

Much has been said, but it seems little has been definitely proven about the absence of Vitamin D and calcium deficiency causing irritability of the G. I. tract. Of course, if this can be proven, and this irritability is a tetany, para-thyroid gr. 1/10, with large doses of calcium (T. I. D., P. C.), with a diet emphasizing orange juice, raw tomato juice and meat and milk, will benefit. Rhinehart, of Little Rock, claims most excellent, quick results with this therapy.

In conclusion: Successful treatment can only be obtained after complete history and thorough examination. This is necessary for correct diagnosis, to rule out organic trouble, and second, without this, the doctor cannot back his opinion with enough force and confidence to carry out the needed psychotherapy.

Vague or general directions do harm. Orders to patient must be very explicit, the diet written or thoroughly explained, but never give a printed diet slip. Explicit instructions as to bromide, phenobarbital and atropine, must be given, seeing to it that this is a temporary crutch and not kept up too long, always keeping in mind that Rest, Relaxation, Reassurance, and Re-education are the *sine quo non* for successful treatment.

DISCUSSION

DR. JOHN L. JELKS (Memphis): Gentlemen, this is one of the best grounded, most classical papers I have ever heard on this subject.

I am going to read you a questionnaire on this same subject, received yesterday. Dr. Horstey, of Richmond, is inquiring of us:

"I have just received a letter from Dr. Harvey Cushing in which he inquires into the incidence of peptic ulcer in the negro. Dr. Cushing's idea seems to be that the negro worries less, he is more carefree than whites, and that this may be the reason why he may be relatively free of peptic ulcer."

It seems someone else, Doctor, is thinking about this subject. My answer, I think, coincides with the Doctor's ideas.

Two chief factors there are that I would call your attention to: First, the negro suffers less focal infection. The teeth are sound. The negro shows more resistance to the common pyogenic infections, therefore suffers less focal infection. Ordinary colds or sinus infections are rare among the negroes as compared with the whites. They are even more common among the half whites than among the real black negroes.

These cases are all-important when they come to your office. They want your confidence and they want your help. The Doctor has properly stated that they deserve your sympathy and your cooperation. They are constipated, and for the reasons the Doctor reports. The colon is spastic; it is always loaded. The ordinary one or two bowel movements per day they may relate they have, yet you look into that colon and you will find almost a complete impaction.

One of the first things you should advise them to do is to keep the colon clean, not by purgation, but it is necessary at first to give a purgative, and that purgative is best what I term a Jelks' highball—an ounce and a half of castor oil. After that, the bland medicines such as mineral oil and the barium the Doctor speaks of, and the belladonna to inhibit that spasm which you always find, may be used. And more water drinking! Do you know that a nervous person, upset and worried about business, forgets to drink water? Do you know that a nervous, upset woman won't drink water? After thoroughly examining a woman for two days I said to her, "Lady, you are absolutely normal except you don't live right."

She said, "You are the first man that ever had the nerve to tell me so."

I said, "You don't drink enough water."

"I don't drink any."

She was constipated and nervous and melancholy and suffering from nervous indigestion.

Yes, they are constipated, so you must govern and control their diet as to regularity and the elimination of too much carbohydrate. People are always carbohydrate eaters when they are overly nervous, and they are overly nervous when they are excessive carbohydrate eaters.

Finally I give them a little poetry: Visit the toilet every day at a certain minute, not hour, and

When nature calls, do not bluff her,
    But haste away,
    Night or day,
Or health is sure to suffer.

DR. JAMES L. BIBB (Closing): I have nothing more to add. My reason for bringing this to you is that it seems to me this thing is increasing by leaps and bounds. We all have a tendency to push these patients out and get rid of them as quickly as possible. We are prone to give them a tonic and tell them they are just run down, and that very tonic usually has a big dose of strychnine in it—just the thing that they ought not to have; with all of their nerve tracts wide open they don't need strychnine to increase their trouble; they need some sedative. Personally, I have no fear of habit forming from giving them what they really need. I think the trouble is that we stop the sedative drug too quickly.

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H. H. SHOULDERS, M.D., Editor and Secretary

JULY, 1932

EDITORIAL

The Science of Medicine and the Control of It

In recent years many suggestions have been offered as to the methods by which medical services should be delivered to the public.

The science of medicine, of course, was scoffed at by learned men not so long ago. Notwithstanding this fact, medicine has proven its worth. It has become indispensable to community life in a modern civilization. This increased appreciation of the importance of applied medical science may be responsible in a large degree for the suggestions that are forthcoming as to how medical services should be rendered.

For one to give proper thought to this question it is necessary to bear in mind several fundamental facts. In the first place the science of medicine in the abstract is of no benefit to humanity at all. The science of medicine is of benefit to humanity insofar as it is properly applied to human needs.

The science of medicine has been applied to human needs through the instrumentality of doctors whose professional conduct is governed by a code of medical ethics.

Early in the development of medicine as a science and an art, the need for a code of conduct became apparent. The code was drafted. It embodied the loftiest principles possible in such a code. That code has been effective in protecting the public and the art and the science of medicine as well. The value of the code cannot be estimated with an degree of accuracy.

The code governs the relationship between doctor and patient. It preserves to the patient his liberty of choosing his doctor under all circumstances. It governs the relationship between doctor and doctor and places that relationship on the highest possible plane. The control of the science and art of medicine is within medicine under the code.

Many of the suggestions that are made would disregard the code completely and substitute therefor governmental regulations or regulations prescribed by powerfully endowed boards of one sort or another.

It has been suggested that doctors are poorly organized to apply the science of medicine to human needs. This is an unproven assertion, of course. It is also suggested that better business methods should be employed.

In the last three years business methods have been on some trial. Many of the glaring faults of business methods have been exposed. The utter lack of ethical principles in business conduct have been made quite evident. It is therefore obvious that the time has not arrived when business methods should supplant the old system in medical practice. It is also obvious that the man has not yet been born fit to govern the delivery of medical services to the public. The control of medical practice and the trusteeship of medical science had better be left in the hands of those who have been its guardians for centuries, under whose guiding influence tremendous progress has been made. Certainly sociologists are not fit to make these plans. Certainly no governmental agency is fit to make these plans. Certainly no groups of business men are fit to make these plans, however powerful the economic force placed at their command.

Shall the liberties inherent in one plan be supplanted by the alleged efficiency of autocracy in other plans? Our answer is no.

The Committees of the State Association and Their Activities

On another page of this issue will be found a list of appointments on the standing committees of the State Association.

A new committee (an Educational Committee) was formed by action of the House of Delegates at Memphis on recommendation of the Liaison Committee. One of the duties of this committee is to educate the practicing physicians insofar as may be necessary in certain phases of preventive medicine, and particularly with reference to the use of the methods of immunizing people against infectious and contagious diseases.

In recent years it has become apparent that a storm was gathering by reason of the encroachments of public health agencies of one sort and another on the legitimate field of medical practice. This storm can be averted.

The Liaison Committee gave serious thought to the questions involved and made definite recommendations to the House of Delegates, which were adopted.

It became obvious to the committee that doctors are at fault in some degree for some of the developments that are taking place.

Doctors have not been alert in the matter of recommending the use of immunizing methods to their patrons. They have not said to mothers, "your child should be immunized against diphtheria, smallpox, etc." Doctors have allowed these suggestions to come from health agencies. As a consequence, health agencies have done the actual administering of immunizing treatments. By such steps this work has drifted away from the doctors. Some lay people have formed the opinion that these treatments are so complicated that the general practitioner cannot adminisiter them, when, as a matter of fact, all the skill required is the skill that every doctor possesses.

In order to make certain that every doctor is fully informed with reference to the use of immunizing treatments a booklet is in the process of preparation by the Educational Committee. It likely will be ready for publication in the next issue of the JOURNAL, and will be ready for distribution shortly thereafter.

If the plans that are contemplated work out as they should the public will have far better service. Doctors will retain their proper relationship to their patients, and public health agencies will retain their proper places in the public health program.

The policies will best serve the public health, the public purse and the profession of medicine.

In order that the profession may be fully informed with reference to the recommendations made by the Liaison Committee they are reproduced under the heading "News Notes and Comments."

STANDING COMMITTEES

COMMITTEE ON SCIENTIFIC WORK

H. H. Shoulders, Chairman, Nashville.
John R. Smoot, Knoxville.
L. T. Stem, Chattanooga.
A. F. Cooper, Memphis.

COMMITTEE ON PUBLIC POLICY AND LEGISLATION

H. B. Everett, Chairman, Memphis.
E. Dunbar Newell, Chattanooga.
T. R. Ray, Shelbyville.
W. P. Wood, ex officio, Knoxville.
H. H. Shoulders, ex officio, Nashville.

COMMITTEE ON PUBLIC HEALTH

The Liaison Committee to be requested to serve as the Public Health Committee.

COMMITTEE ON CANCER

Battle Malone, Chairman, Memphis.
A. H. Lancaster, Knoxville.
H. M. Tigert, Nashville.
Wm. Britt Burns, Memphis.
Edward T. Newell, Chattanooga.

COMMITTEE ON MEDICAL EDUCATION

J. B. McElroy, Chairman, Memphis.
J. L. Bibb, Chattanooga.
W. S. Leathers, Nashville.
J. A. McCulloch, Maryville.
Jack Witherspoon, Nashville.

STATE TUBERCULOSIS HOSPITAL COMMISSION

J. O. Manier, Chairman, Nashville.
J. B. Naive, Knoxville.
James A. Price, Oakville.

COMMITTEE ON HOSPITALS

A. G. Kern, Chairman, Knoxville.
J. B. Haskins, Chattanooga.
J. P. Keller, Nashville.
E. T. West, Johnson City.
W. L. Williamson, Memphis.

ADVISORY COMMITTEE TO THE WOMAN'S AUXILIARY

C. M. Hamilton, Chairman, Nashville.
G. Victor Williams, Chattanooga.
K. C. Copenhaver, Knoxville.
Percy H. Wood, Memphis.
Dewey Peters, Knoxville.

COMMITTEE ON EDUCATION

J. M. Lee, Chairman, Nashville.
Joe T. Smith, Knoxville.
W. Lee Rucks, Memphis.
Dulaney Anderson, Chattanooga.

LIAISON COMMITTEE

W. C. Dixon, Chairman, Nashville (four years).
W. P. Wood, Knoxville (three years).
J. G. Gallagher, Nashville (two years).
R. L. Sanders, Memphis (one year).
J. L. Raulston, Knoxville (five years).

DEATHS

Dr. J. L. Rose, Jellico; Hospital College of Medicine, Louisville; 1879; aged 78, died in June.

Dr. E. M. Sanders, Nashville, University of Tennessee Medical School, 1906, aged 57, died June 30, 1932.

RESOLUTIONS

We, the Nashville Academy of Medicine and the Davidson County Medical Society, in special session assembled, desire severally and collectively to proclaim the great professional loss and profound grief experienced by us in the death of our beloved confrere, Dr. Evander McIver Sanders, who died at the Protestant Hospital on June 30, 1932.

He was born at Smyrna, Tennessee, July 18, 1875, the son of Thomas M. and Martha Ann Gregory Sanders.

After acquiring a literary education in the common schools in his birth place he pursued his studies further in Nashville, Tennessee, after which he entered the business world and was promptly rewarded with success.

In order to fulfill his greatest ambition he entered the Medical Department of the University of Tennessee, from which he graduated with high honors in 1906.

Blessed by nature with unusual mental endowment, amply aided with great energy and persistency, he achieved an unusual degree of professional success in his twenty-six years of activity.

Possessed of a colorful personality and great charm of manner he attracted countless friends.

His lavish generosity characterized the very essence of his being so that he freely contributed not only to the poor but to many worthy things as well.

The Protestant Hospital stands as an enduring monument to his devotion, untiring energy and personal self-sacrifice.

In 1907 he married Miss Sarah Kendrick in whom he found an aid and helpmeet endowed with that devotion which ever acts to inspire men to greater and nobler deeds and to whom we extend our deepest sympathy.

Be it resolved: That the Nashville Academy of Medicine and Davidson County Medical Society has lost one of its premier surgeons, and the community at large a great, useful citizen, and further that a copy of these resolutions be spread on the minutes and a copy be transmitted to Mrs. E. M. Sanders and the public press.

H. M. TIGERT, *Chairman,*
T. G. POLLARD,
W. A. BRYAN,
Committee.

NEWS LETTER OF THE WOMAN'S AUXILIARY, A. M. A.

Since the May News Letter went to you the New Orleans Convention has come and gone. A most impressive one it was to all who attended it. Our Mrs. Walter Jackson Freeman attributes the amazing perfection of that Convention particularly to two women, Mrs. McGlothlan, the President, and Mrs. Joseph Hume, General Chairman of the Convention Committee.

The attendance was most gratifying. For obvious reasons it was not expected that attendance would equal that at Philadelphia in 1931. There were 918 women registering at New Orleans. This number was 65 per cent of the Philadelphia registration. The A. M. A. at New Orleans registered 2,752, amounting to 34 per cent of the Philadelphia number. This is convincing proof of the Auxiliary women's growing sense of responsibility for the organization.

No foreword concerning the Convention this year could have given you an adequate idea of how interesting, informing and helpful the meetings proved to be, or how delightful and unusual were the diversions and social features prepared by the Convention Committee for the time not assigned to the working program.

No other city could have provided a diversion comparable to the "Walk through Vieux Carré with Guides," nor anything more beautiful than greeted the guests "Through Garden Gates." Nor have given the opportunity to meet in person and in her home the long admired Dorothy Dix (Mrs. Gilmer). In "Divertissements in the Garden" The Orleans Parish Medical Society presented to the Auxiliary the most appropriate Interpretative Dancing followed by an hour of Negro Spirituals of perfect quality.

New Orleans has a bit of our own Latin-America, and shows sense and sensibility in preserving and enjoying and sharing with its visitors the hundred squares of the Vieux Carré so beguiling in architecture, so full of vital and romantic history. Whether with "Things of Yesterday" or with "The Joys of Today," enriching experiences were provided for the hours of leisure.

The General Meeting of the Auxiliary occupied the mornings of Tuesday, Wednesday and Thursday, May 10, 11 and 12, meetings so well planned by Mrs. McGlothlan that maximum accomplishments resulted with minimum appearance of machinery.

The reports of officers and committee chairmen and of state presidents brought stimulating records of achievement and plans for the future.

All Auxiliary women will be interested in the report of the nomination committee and election of officers.

The roster of officers and chairmen of standing committees follow:

President—Mrs. Walter Jackson Freeman, Philadelphia, Pa.; President-Elect—Mrs. James Blake, Hopkins, Minn.; Recording Secretary—Mrs. Sherman S. Hesselgrave, St. Paul, Minn.; Corresponding Secretary—Mrs. Henry F. Page, Philadelphia, Pa.; Treasurer—Mrs. Robert W. Tomlinson, Wilmington, Del.

Vice-Presidents—First, Mrs. James F. Percy, Los Angeles, Calif.; Second, Mrs. William R. Brooksher, Jr., Fort Smith, Ark.; Third, Mrs. Arthur C. Christie, Washington, D. C.; Fourth, Mrs. Rollo K. Packard, Chicago, Ill.

Directors—One year: Mrs. Arthur B. McGlothlan, St. Joseph, Mo.; Mrs. Arthur T. McCormack, Louisville, Ky.; Mrs. Evarts V. De Pew, San Antonio, Texas; Mrs. Willard Bartlett, St. Louis, Mo. Two years: Mrs. Joseph Hume, New Orleans, La.; Mrs. Joseph A. Pettit, Portland, Ore.; Mrs. J. Ralston Wells, Daytona Beach, Fla.

Chairmen of Standing Committees—Program: Mrs. Arthur B. McGlothlan, St. Joseph, Mo.; Finance: Mrs. Joseph J. Meyer, Johnstown, Pa.; Legislative: Mrs. William Weston, Columbia, S. C.; Public Relations: Mrs. A. Haines Lippincott, Camden, N. J.; Hygeia: Mrs. Rogers N. Herbert, Nashville, Tenn.; Revisions: Mrs. Spencer Allen Collom, Texarkana, Texas; Press and Publicity: Mrs. Milton P. Overholser, Harrisonville, Mo.; Printing: Mrs. J. Newton Hunsberger, Norristown, Pa.; Convention: Mrs. L. Rock Sleyster, Wauwatosa, Wis.; Archives: Mrs. William Burrill Odenatt, Philadelphia, Pa.; Exhibits: Mrs. Henry R. Miner, Falls City, Neb.; Historian: Mrs. Allen H. Bunce, Atlanta, Ga.; Parliamentarian: Mrs. John Alexander McCaw, Denver, Colo.

NEWS NOTES AND COMMENTS

REPORT OF LIAISON COMMITTEE

(Approved by the House of Delegates, April 13, 1932.)

The Liaison Committee was enlarged and its duties outlined by an amendment to the By-laws adopted at the 1931 meeting of the Tennessee State Medical Association. The section of the amendment outlining the duties of the committee is as follows:

"It shall be the duty of this committee to confer with the officials of the Department of Health of the State in matters of policy affecting the profession of the State; and it shall be the further duty of this committee to confer with any member or members of this Association in matters concerning the activities of the Department of Health of the State. Provided, that all matters over which this committee shall have jurisdiction shall be presented to the committee, through the Chairman, in writing."

The committee was appointed in November, 1931. Since that time two meetings have been held.

At the first meeting Dr. Shoulders was asked to explain the purpose of the committee in the editorial columns of the Journal. This was done. At a later date a personal letter was written to each member of the Association setting forth the purpose of the committee and expressing a willingness to consider any matters brought to its attention. No complaints have been filed with the committee.

The members of the committee have given a great deal of thought to the problem of the public health, the public health department, the practitioner of medicine, and their relations to one another.

The Committee held a conference at its last meeting with Dr. Bishop, State Commissioner of Health, and individual members of the Committee have had conferences with Dr. Bishop, with other health workers in the State, and with numerous physicians.

As a result of its study, the Committee has two recommendations to make to the House of Delegates. The first of these is that there shall be formed a Public Health Council, whose members shall be licensed practitioners of medicine or dentistry, and who shall be members of the Tennessee State Medical Association or the Tennessee State Dental Association. There would be seven members of this Council; two physicians from each grand division of the State, and one dentist from the State at large. The medical members would be appointed from a list of six members from each grand division of the State, nominated to the Governor by the House of Delegates of the Tennessee State Medical Association. The dental member from the State at large would be appointed by the Governor, from a list of three nominated to him by the State Dental Association. The terms of office of the members of the Council would be so arranged that a new member would be appointed by the Governor each year. The Council would elect its own officers, and a secretary, not a member of the Council, the latter being the executive officer or health commissioner of the State. The creation of this Council would be by legislative enactment, and its duties and powers would be defined in the bill.

The Liaison Committee feels that such a Council would be a direct connecting link between the Department of Health and the profession. Such contact, we believe, would result in moulding the policy of the Health Department in such a way that the interest of the public, the Department, and the profession would be best served.

The Committee also recommends for the consideration of the House of Delegates a plan of expansion of County Boards of Health, whereby the County Boards of Health would have as members, three physicians, in counties where there be sufficient physicians; said members to be elected by the County Court from a list of nominations made to the Court by the County Medical Society.

It is our feeling that such a relationship between the County Medical Society and the County Health Department would be beneficial to both.

Our second recommendation concerns the Campaign which the health organizations carry on continuously, to secure immunization of the public against certain diseases, such as Diphtheria, Typhoid Fever and Smallpox. A good deal of the effort of the State Health Department is directed to this campaign. It is our feeling that this work should be done by the private practitioner, if possible. In order that this may be accomplished it is necessary for the practitioner to realize his responsibility in the matter, and be willing to shoulder this responsibility, to the end that a suitable body of immunes be developed in every community.

We feel that a series of meetings in the various County or District Societies, sponsored by the Tennessee State Medical Association, in co-operation with the State Health Departments, devoted to this subject would serve to focus the attention of the profession on this problem.

Suitable speakers, representing the Tennessee State Medical Association, could emphasize the importance of immunization, the results that could be expected, and the technique of the various procedures. If the profession would assume the work of immunization the State Health Department could devote its energies to an educational campaign, urging the people to seek this service from their physicians

Dr. Bishop is heartily in favor of these meetings and in the plan to place all vaccinations and immunization in the hands of the practitioner as rapidly as possible.

If this plan is approved by the House of Delegates and the co-operation of the profession can be secured, it would result in maintaining that relationship between patient and physician which we believe to be to the best interest of all concerned.

If the House of Delegates approves these recommendations, we would suggest that the matter of providing for a public Health Council be referred to the Committee on Public Policy and Legislation, with the request that the necessary legislation be secured at the next session of the Legislature.

We feel that the matter of the meetings proposed, could be best handled by a Committee on Postgraduate instruction, large enough to have several members from each section of the state, or by having a separate committee from each grand division of the state.

Dr. W. C. Dixon, *Chairman*,
Dr. W. P. Wood,
Dr. Joe F. Gallagher,
Dr. R. L. Sanders,
Dr. B. S. Rhea.

GOOD WORK IN KNOX COUNTY

A recent attendance report from Knox County shows some very interesting facts. The report covers the first six months of the year, during which time twenty-five meetings of the society were held. Ten members were present at each of the twenty-five meetings. This is such an unusual record for so large a group, we are giving the names of those with perfect attendance. They are Drs. R. B. Wood, R. G. Waterhouse, Jesse C. Hill, J. H. Gammon, J. E. Mathis, J. B. Naive, E. A. Guynes, Joe T. Smith, M. S. Roberts and Kyle Copenhaver.

The next largest group is of nine names. Each member of this group has been present ONCE this year. No, we will not publish that list.

Three groups of eight members each have been present fourteen times, eight times and four times.

Those present thirteen or more meetings number fifty-one.

The total of 1385 attendance at twenty-five meetings makes an average attendance of 55.4 present at each meeting.

Such an attendance shows loyalty on the part of many members and consisent hard work on the part of the secretary.

The eleventh annual scientific session of the American Congress of Physical Therapy will be held at Hotel New Yorker, New York City, September 5-10. Preliminary programs may be obtained from American Congress of Physical Therapy, 30 North Michigan Avenue, Chicago.

The examination of the American Board for Ophthalmic Examinations will be held Monday, September 19, 1932, at Montreal, at the time of the meeting of the American Academy of Ophthalmology and Oto-Laryngology.

A number of physicians are taking post-graduate courses at Vanderbilt University now. Local papers have recorded the following: Drs. R. C. Gaw, of Gainesboro; G. D. Lequire, of Maryville; M. L. Shelby, of Clarksville, and John Ogle, of Sevierville.

Dr. A. R. Kempf, of Springfield, addressed the Rotary Club of that city, on June 15.

Dr. Jas. V. Hughes has opened his office in Savannah.

Dr. B. E. DeLozier, of Blount County, has announced his candidacy for the legislature.

The rebuilding of the Emerald-Hodgson Hospital at Sewanee has been completed and is now occupied. Dr. John Hardy, of Vanderbilt, has been appointed surgeon to take the place held by the late Dr. Allen Lear.

On June 24 Dr. B. F. Turner was operated on for acute appendicitis at the Methodist Hospital, Memphis.

Drs. K. A. Bryant and A. M. Gamble, of Maryville, have formed a partnership. Their work is limited to the ear, eye, nose and throat.

MEDICAL SOCIETIES

Benton, Carroll, Henry, Weakley Counties:

Drs. Barney Brooks and Hugh Morgan, of Vanderbilt University, presented the papers at the regular monthly meeting of the Society on June 14. Dr. Brooks read a paper on "Diagnosis and Treatment of Disease of the Gall Bladder," which he illustrated with slides. Dr. Morgan gave a paper on "Hypertension: Comments on Etiology, Management, and Sequelæ." About twenty-five members were present and they engaged in round-table discussion of these papers.

Instead of the regular monthly meeting in July a banquet was planned for the doctors and their wives, to be held at the Hotel Lynn, on July 12.

Decatur, Chester and Henderson Counties:

On June 9 the meeting was held at Benton Springs. About thirty members and guests were present. Drs. Wiley and Howell presented and discussed a very interesting paper. A big dinner was served. Those present voted the meeting a success in all lines.

Hamilton County:

At the meeting on June 9, the speakers were Mr. Morgan Bright, of the Retail Credit Men's Association, and Dr. Edward F. Buchner, Jr., whose subject was "Obstetrics up to the Renaissance."

June 16—"Some Endocrinologic Disturbances in Childhood," by Dr. W. E. Van Order.

June 23—"Peptic Ulcer," by Dr. J. B. Haskins.

June 30 — "The Larynx and its Diseases," by Dr. A. E. Goodloe.

July 14—"Chronic Appendicitis," by Dr. J. J. Armstrong, and "Surgical Conditions of the Gall Bladder," by Dr. Hiram A. Laws.

On August 11, Dr. J. C. Brooks will read a paper on "The History of the Medical Profession in Chattanooga," and Dr. Fred B. Stapp on "Looking Backward."

Hardin, Lawrence, Lewis, Perry and Wayne Counties:

On May 31 the following was held at Lawrenceburg. An attendance of twenty-one enjoyed the following program:

"Differential Diagnosis of Smallpox and Chicken Pox," by Dr. W. H. Neal, Lawrenceburg. Discussion opened by Dr. W. E. Boyce, Flatwoods.

"Organic and Inorganic Heart Lesions," by Dr. W. H. Witt, Nashville. Discussion opened by Dr. T. J. Stockard, Lawrenceburg.

"Treatment of Anemia in Infants," by Dr.

Milton S. Lewis, Nashville. Discussion opened by Dr. G. N. Springer, Hohenwald.

"Toxemia of Pregnancy," by Dr. W. B. Anderson, Nashville. Discussion opened by Dr. D. L. Woods, Waynesboro.

The regular monthly meeting was held in Hohenwald on June 28 at the Meriwether Lewis National Park. A basket dinner was served by the doctors' wives. The following papers were read:

"Diarrhea in Children," by Dr. G. N. Springer, Hohenwald. Discussion opened by Dr. T. J. Stockard.

"Cancer of the Cervix," by Dr. Theo Morford, Jr., Nashville. Discussion opened by Dr. Paul Faucett, Columbia.

"Treatment of Placenta Previa," by Dr. C. C. Stockard, Lawrenceburg. Discussion opened by Dr. C. V. Stevenson, Centreville.

"Case Reports," by Dr. W. E. Turner, Lobelville. Discussion opened by Dr. J. H. Tilley, Lawrenceburg.

Knox County:

June 14—"Renal Tuberculosis," by Dr. Tom Barry. Discussion opened by Dr. Fred Garvey.

June 21—"Syphilis," by Dr. Forest LeTellier. Discussion opened by Dr. Tom Barry.

June 28—"Preoperative and Postoperative Treatment of Abdominal Cases," by Dr. R. A. Barr, of Nashville.

Montgomery County:

On June 15, the society met at the hospital. A general discussion of diseases and cases made an interesting and informal program which was enjoyed by all present.

Obion County:

The Obion County Medical Society held its regular meeting June 23. A full attendance was present.

Sullivan-Johnson Counites:

The June meeting was held at the General Shelby Hotel. After a dinner in honor of the visiting speakers about forty physicians enjoyed the scientific program.

Dr. D. Lesesne Smith, of Spartanburg, S. C., spoke on "Preventive Pediatrics." The paper was discussed by Dr. Frank Richardson, of New York City and Black Mountain, N. C., and Dr. Snido, of the Virginia State Health Department.

Weakley County:

The Weakley County Medical Society held its monthly meeting at Martin on June 15, with a number of the medicos present.

Drs. H. B. Stephens, Dresden, and D. L. Jones, of Fulton, both read papers dealing with the continuance of the county unit, and these papers were ordered sent to the State Medical Journal for publication.

Williamson County:

The Society met on June 14 with Dr. Dan German presiding. An excellent address was delivered by Dr. Hearne Bradley, of Nashville, on "Feeding of Infants and Children."

The meeting was well attended. A profitable round-table discussion followed the program.

OTHER MEDICAL SOCIETIES

The West Tennessee Medical Association has again elected officers. Dr. A. I. McSwain, of Paris, is now serving as secretary for the fortieth year. Other officers are Dr. W. Oscar Baird, of Henderson, President; Dr. H. G. Edmondson, of Martin, First Vice-President; Dr. R. C. Newkirk, of Tiptonville, Second Vice-President, and Dr. George McSwain, of Paris, Assistant Secretary.

The Upper Cumberland Medical Society met for the thirty-eighth annual session at Cookeville June 16-17. The program was exceedingly good and the meeting was one of the best in years.

NEWS OF WOMAN'S AUXILIARY

SHELBY COUNTY

The regular monthly meeting of the Auxiliary was held on June 15, this being the last meeting until fall.

An interesting health talk was given by Dr. Percy Toombs. After the meeting a luncheon was held at the University for all members.

An announcement was made that we would have a barbecue on July 12, at Maywood, asking all the doctors and their wives of the Shelby County Medical Society to attend. At which time we expect to raise the $400.00 still due on our $1,000 pledge for the year.

We had three new members to join at the meeting, making a paid-up membership of 97. With our membership drive that ends October 1 our goal is 150 paid-up members.

DAVIDSON COUNTY

The Davidson County Auxiliary gave a picnic on June 6, at the summer home of Mrs. W. W. Wilkerson on Stones River. There was a large attendance. Mrs. Theodore Morford, our County President, presided over a short business meeting, after which a picnic luncheon and swimming were enjoyed.

ABSTRACTS OF CURRENT LITERATURE

ANESTHESIA

By Hugh Barr, M.D.
Medical Arts Bldg., Nashville

Experience With Lumbar Anesthesia in Obstetrics. S. A. Cosgrove, M.D., F. A. C. S., Jersey City, N. J. The American Journal of Surgery, June, 1932.

Labor involves many hours, stretching sometimes into days, whereas, the most formidable and tedious operation of general surgery can hardly last more than three or four hours. No comparable means of shortening the time for the normal, or safe operative evolution of parturition is at the disposal of the obstetrician. Hence, while general surgery demands total anesthesia for its activities, the obstetrician must accept for his patient a partial relief only for the pangs of delivery.

The action of spinal anesthesia on the course of labor is to retard it. Thus, if given electively near the end of the second stage of cases presumably capable of spontaneous delivery, two-thirds of them will be arrested, and will require artificial aid. They will deliver normally, however, if time be given to allow the wearing off of the anesthesiaa. This effect does not depend on the abolition of the uterine traction, but the retarding action on labor would appear to depend, therefore, on the loss of the auxiliary powers, partly due, no doubt, to slight depression of the voluntary motor power of the muscles, but mostly dependent on the abolition of the sensory phase of the sensory-motor reflex which normally brings these forces into play.

The author has given 1832 lumbar anesthesias. There has been no maternal or fetal mortality attributable to this method of anesthesia. Failure of anesthesia less than two percent. Lumbar anesthesia is not a method for first stage, or for prolonged second stage, analgesia, by the reason of its short duration. It is applicable to the termination of the second stage of labor in:

1. Normal cases in which analgesia requires to be supplemented by true anesthesia, provided the obstetrician is prepared to accept a largely increased necessity for elective artificial delivery.
2. All cases initially requiring operative delivery, by either the vaginal or abdominal routes.

CLINICAL PATHOLOGY

By R. H. Monger, M.D.
Medical Building, Knoxville

Laboratory Methods of Treating Pneumonia. N. Plummer, New York. Jour. of Lab. and Clinical Medicine. March, 1932.

The author states that during the past few years pneumonia has been the subject of extensive investigation, but most of the discoveries have not yet reached the stage of practical significance. Perhaps the most important advance toward the solution of this problem has been the chemical fractionation of the pneumococcus. This information has recently been applied by Avery and Dubos to the development of an exzyme that splits the carbohydrate fraction of type III pneumococcus and by so doing destroys the toxicity of this organism. Already these scientists have been able to protect mice against the type III pneumococcus infection and it is probable that this agent will be of value in the treatment of pneumonia. The majority of pneumonia patients today are not given the benefit of typing, even when the events of typing diagnosis are so striking, as shown by the following examples: Two pneumonia patients with the same amount of lung involvement and the same degree of toxemia are seen late in an infection. Assume that one is type I with a negative blood culture and the other a type III with a positive blood culture. The type III patient will almost certainly die. The type I has a good prognosis, and if given the benefit of concentrated serum, will almost certainly recover. For the proper management of pneumonia, sputum should carefully be examined and typed as a guide to the prognosis and to insure the administration of serum in types in which it has been efficacious.

Vaccines in Clinical Medicine. R. A. Keilty, Washington, D. C. Jour. of Lab. and Clinical Medicine. March, 1932.

The author thinks that the vaccines of today is one of imbalance. There has been too much accepted in the past to disregard them entirely, so a middle ground would be an acceptable attitude. A vaccine is a vaccinogenic solution having the power of producing specific antibodies in vivo. Vaccine prepared from multiple flora, are selected by the author exclusively on their quantitative appearance in culture and allergic cutaneous reaction. Vaccines should be prepared in such a way that the vaccinogenic factor is as nearly unaltered as possible but no solution should be used in which a viable organism has any change of becoming virulent. The best trend in doses is to start in small amounts, 0.1 c.c., increased in 0.1 c.c. stages and given every other day over a long period. Each individual case is an entity and for this reason the best results are obtained after experience. In the preparation of vaccines, one should not pay most attention to the bacterial count, but make heavy suspensions and vary the doses according to general reactions. The desirability of general reaction for immunity producing purposes is stressed.

ORTHOPEDIC SURGERY

By Robert F. Patterson, M.D.
Medical Arts Building, Knoxville

The Repair of Ununited Fracture of the Neck of the Femur, by Paul B. Magurson. Jour. A. M. A., May 21, 1932.

This article begins by pointing out the futility of using spikes and autogenous bone pegs to fasten the head to the trochanter through a mass of heavy fibrous tissue.

He states that boney union rarely occurs. This is due not only to the fibrous tissue but to the fact that there is a considerable interval between the trochanter and the head where the neck has been absorbed with only the graft spanning the gap.

The Whitman and Brackett operations have not been sufficiently used. He seems to prefer the Brackett procedure and has performed seventeen of these operations as follows:

The Smith Peterson incision is used. The sartorious muscle is split and the inner attachment of the quadriceps is cut close to its attachment. The capsule is exposed and split from the acetabulum to the trochanter, then is cut crosswise near the edge of the acetabulum.

Through this full exposure all the mass of fibrous tissue is removed with heavy curved round pointed scissors. The head is usually adherent to the rim, and must be freed. With a large motor-driven burr the head is hollowed out to form a truncated cone. This is carried almost to the cartilage. The trochanter is sliced off at the original angle of the neck. The upper end, with the remains of the neck, is then brought out of the wound and rounded off in the same curve which had been produced in hollowing out the head. This is then fitted into the hollow head by the use of a Murphy skid.

The trochanter is then reattached to the shaft of the femur. This is done by carrying sutures through two holes drilled in one side of the cortex and carried up through the muscle attachments of the trochanter. Forty-five degrees abduction must be maintained and the leg must be fixed in internal rotation for eight weeks. If these positions are maintained the hip can be otherwise moved.

OPHTHALMOLOGY

By Robert J. Warner, M.D.
Doctors Building, Nashville

The Anterior Vitreous in Health and Disease. D. B. Kirby. American Journal of Ophthalmology, June, 1932.

There is evidence to prove that a condensation layer limits the vitreous anteriorly. The author believes the so-called hyaloid membrane is directly behind the lens. This layer does not correspond to the requirements of structureless membranes as seen by polarized light. It must be only a mesh of ultramicroscopic fibrils more dense in formation than the balance of the vitreous.

The slit-lamp beam shows an irregular fibrillar layer in apposition with the posterior lens capsule. It also shows the arc line of attachment of the hyaloid artery to the anterior condensation layer, as well as the attachment of the latter to the lens at the hyaloid capsule ligament. The remnants of the hyaloid artery itself may be differentiated with ease. The canal of Cloquet has been well demonstrated, giving a complete idea of the anterior boundaries so that it can easily be located at the so-called hyaloid capsule ligament.

Liquefaction of the vitreous manifests itself in the slit-lamp picture by absence of a part or the whole of the typical moire curtains, with mixing of the primary and secondary vitreous and frequently by loss of the retrolental space and by the fact that newly formed opacities float more freely than in the normal vitreous. The fibrils become more visible and floating bodies immediately back of the lens act as though suspended in a liquid medium.

PEDIATRICS

By John M. Lee, M.D.

Doctors Building, Nashville

Prophylaxis of the Anemia of Premature Infants. Arthur F. Abt, M.D., and Beth R. Nagel, S.B. Jour. A. M. A., June 25, 1932.

Three groups of premature infants were studied with the view to prevent the development of the physiologic anemia of these babies. One group was given dessicated hog's stomach (ventriculin), a second group was given liver fraction, and a third group was treated with a preparation of liver fraction combined with iron ammonium citrate. In other studies, iron alone has not proven a satisfactory prophylactic in these cases. In this work, neither the use of dessicated hog's stomach (ventriculin) nor the use of liver fraction alone proved of value in the prevention of the anemia.

The data obtained indicate that a combination of liver fraction and iron ammonium citrate, started within the first fourteen days after birth with initial dosage of from 1 to 2 gm. twice daily, and increased up to 4 gm. twice daily, was the most efficient of the prophylactic agents investigated. There was a definite response to this treatment, which was most marked in the series of premature infants of from six to seven months' gestation, in which group the anemia is most severely developed.

In this article are discussed the symptomatology of anemia of prematures, the theories as to its cause, and the various agents used in attempts to prevent and relieve the condition. The details of this study are given in a series of tables.

SURGERY — GENERAL AND ABDOMINAL

By John L. Dies, M.D.

1213 Exchange Building, Memphis

The Preservation of the Ileocaecal Sphincter in Resection of the Right Half of the Colon. Dr. W. H. Ogilvie, The British Journal of Surgery, Vol. xix, July, 1931, No. 73, pg. 8-24.

The operation here described is difficult and severe, and by no means without risk. It is, however, so essentially sound in principle, and has been so successful in the two instances recorded below, that the author intended to perform it in further cases where the disability justifies a procedure of such magnitude. One difficulty is that the patients are wasted, toxic, and discouraged, and already in poor condition to withstand a severe ordeal. Extensive adhesions from previous operations must be separated, a time consuming task, before resection can be commenced.

In the operation itself the chief difficulty is that of making a secure and leak-proof transplant into the side of the colon. Care is required in cutting the caecal patch to ensure that its size is conformable to that of the opening in the colon, and that the ileal opening is at its center and not near enough to any edge to suffer damage to its musculature or nerve-supply. The suture of the posterior caecal wall to the transverse colon is the least secure past of the anastomosis, since the whole of this wall presents a rather indefinite surface uncovered by peritoneum, an enlarged "danger area." For this reason the author has used interrupted stitches for the posterior half of the first layer, and have reinforced the whole anastomosis with a third layer of sutures.

After operation there remains the further difficulty of getting the bowels open without putting any strain on the new stoma. To minimize this strain, the author had the patients in hospital for a week before operation, and given them 4 oz. of Petrolagar daily. On the morning of the operation the colon is washed out. After operation Petrolagar is again given every four hours. In spite of these precautions, it has been necessary in each case to give a small glycerine enema before the bowels were evacuated.

On account of these difficulties and dangers, the author performed in a third case the operation of transplantation of the caecum. The first stages of this operation were identical with those described. An end to end anastomosis was then made, by the aseptic method of Pringle and Schoemaker, between the caecum, half an inch beyond the sphincter, and a point in the transverse colon about its middle, chosen to allow the caecum to lie naturally in the bed of the hepatic flexure after anastomosis. The author has found that the aseptic method has robbed end to end anastomosis in the colon of its difficulties, not because it is aseptic, but because the two ends of gut are held straight and of identical length till the suture line is complete. The junction, when finished, is a much neater piece of work than the author had ever succeeded in producing by the open method. Pringle's forceps had failed him, and Schoemaker's, he found too short. Those the author used are made by Down Bros., and are Schoemaker's blades 1 cm. longer than the original pattern. In this operation the result after three months is identical with that following the operation of ileocaecal transplantation, but the radiograms taken three weeks after operation show a very definite diaphragm at the suture line, leading to marked stasis in the terminal ileum.

The operation of transplantation of the caecum is shorter, easier, and probably safer, than that of transplantation of the ileocaecal valve. When resection of the ascending colon is required for non-malignant conditions in which the caecum is undamaged, as in the case reported, it is probably the better; but when, as in most cases following previous operations, the caecum is damaged, the operation of transplanting the valve alone into a new caecum made from colon which is healthy, is more likely to give results that are permanently satisfactory.

UROLOGY

By Tom R. Barry, M.D., F.A.C.S.,
and F. K. Garvey, M.D.
Medical Building, Knoxville

Pathological Anatomy of Testicular Torsion. Maurice Muschat, M.D., F. A. C. S., Philadelphia.

A splendid review of the anatomy, descent, and morphological changes of the testicle, epididymis and cord is given with probably the most plausible explanation as yet of the mechanism bringing about torsion. Reviewing the literature the author concludes that there is only the intravaginal type of torsion which, if true, simplifies the explanation. Extra vaginal torsion would naturally occur only where external force tore the testis from its scrotal attachment, particularly from the gubernaculum. This seems highly improbable because of the amount of trauma necessary.

Reporting a case which he operated 18 hours following onset, the author has shown a careful topographical study of the parts involved with serial sections, wax models, etc., which appears conclusive of the manner in which this case came about.

Normally the testis and epididymis follow the descent of the processus vaginalis lying external to it. In reaching the scrotal cavity there is a rotation upward and outward on their axis of 180 degrees, making an upper and lower pole of the epididymis, at the same time becoming invested or invaginated into the tunica vaginalis laterally and covered with peritoneum everywhere except the lower pole and behind.

Intereference with descent and rotation accompanied by high investment of the tunica vaginalis brings about a condition where the testicle and epididymis hang freely in the vaginal cavity instead of being a partially extravaginal attachment to the scrotal cavity. This body hanging free in the vaginal cavity is susceptible to twisting or torsion, which brings us to the other part of the process of torsion. Muschat with others believes that the force that actually causes the rotation is strong contraction of the cremaster muscle. He claims that due to the abnormally high investment of the cord, the cremaster fibres instead of covering the tunica vaginalis, reach down within it to the lowermost part of the spermatic cord, where a strong contraction will rotate the testicle and adnexa.

His case showed the cremaster fibres in a contracted state at operation.

His conclusions are that torsion is caused by a high investment of testis, epididymis, and cord permitting the cremaster muscle to be carried into the vaginal sac. Consequently a freely movable testis with a spiral muscle attached to its stalk will easily become twisted when cremaster spasm occurs.

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IMMUNIZATIONS FOR COMMUNICABLE DISEASES

The following is submitted by the Committee on Education of the Tennessee State Medical Association. These discussions are limited to the indications, contra-indications and technique of immunizations for the diseases considered. They are not offered as complete discussions of all phases of these diseases.

John M. Lee, Chairman.
Joe T. Smith, Jr.
W. D. Anderson.
W. L. Rucks.

Introductory Statement

It is obvious to all who observe the present-day trend in medicine that certain types of medical service are being taken over by agencies other than the practitioner of medicine. A pronounced example of this is seen in the tendency of various organizations to assume responsibility for the immunization of the public against infectious diseases. That this is a legitimate field of activity for the practitioner and a legitimate source of income for him, no one can deny. The fact is, however, he does not do the volume of this work he should.

The Liaison Committee of the State Medical Association has made a study of this subject, and has been forced to the conclusion that the practitioner himself is largely responsible for the way in which this work is now carried on. We feel that the practitioner is the best agency through which this work should be done, and we believe that with small effort on his part it will all be returned to his hands. He must first realize his responsibility in the matter and be willing and ready to assume this responsibility. The technique of all the required procedures is easy to master. The equipment is simple.

Every one will acknowledge that it is essential to have a sufficient number of persons immune to each of the infectious diseases in every community in order that epidemics may not occur. Some one must supply this immunity. If the doctor does not assume the responsibility, some one else must.

Many doctors hesitate to urge their patrons to have the various immunizations on the grounds that it is unethical to solicit business. We feel that it is the duty of the physician to advise his patrons to have the immunizations which are of proven value. He would not hesitate to advise against the use of water from a contaminated spring. The mere fact that to receive immunity to a given disease the patient assumes a financial obligation to the doctor, does not change its status. It is preventive medicine in the purest form. The patient does not have the knowledge necessary to appreciate its value, and it is the duty of the doctor to urge the patient to secure the needed protection.

The Liaison Committee made two recommendations to the House of Delegates of the State Medical Association at the Memphis meeting. They were both adopted. The first was that there should be formed a Public Health Council composed of six doctors and one dentist. The doctors would be selected by the Governor from a list of names nominated to him by the House of Delegates. The dentist would be chosen from a list of names nominated by the State Dental Society. This council would in turn elect the Health Commissioner and would advise with him in all public health activities.

The second recommendation was that a series of meetings should be held in the various county and district societies, at which meetings speakers representing the Tennessee State Medical Association should "emphasize the importance of immunization, the results that could be expected, and the technique of the various procedures." The State Department of Health will coöperate in these meetings.

Dr. Bishop, Commissioner of Health, is heartily in favor of these meetings and in the plan to place all vaccinations and immunizations in the hands of the practitioner as rapidly as possible.

The Committee on Education has prepared the following articles as the first step in the plan to return this work to the practitioner. The meetings devoted to this subject will occur at a later date. We believe that with a minimum of effort the practitioner can carry this work on far beyond its present limits to the great advantage of the public. It would reach the children of pre-school age, which group is not being taken care of to any great extent by any agency at this time. It is well known that some communicable diseases preponderate in this age-group.

We bespeak for these meetings and for the general plan the hearty coöperation of the profession of the State.

The Liaison Committee.
Dr. W. C. Dixon, Chairman.
Dr. Joe F. Gallagher.
Dr. R. L. Sanders.
Dr. W. P. Wood.
Dr. J. L. Raulston.

SMALLPOX

SMALLPOX is prevented by inoculating the patient with virus obtained from lesions on the cow that has cowpox. Commercial smallpox virus is a glycerinated product which deteriorates and loses its potency quickly if not kept cold. It will deteriorate in ordinary refrigerators, and keeps best if stored in a temperature below freezing. The virus used should be fresh, and should not be used later than the expiration date stamped on the package by the manufacturer.

Indications for Vaccination for Smallpox

Infants should be vaccinated as soon after birth as practicable, preferably before teething. Winter and spring are more suitable seasons than the warmer months. The younger the patient, the milder the reaction to vaccination for smallpox, complications are less likely to occur, and the scar fades more and is less unsightly than in older patients. Between the ages of two and six months seems the best general time for vaccination.

Duration of Immunity

The duration of protection from a successful vaccination cannot be accurately stated. In general, protection lasts from five to ten years. Some individuals lose immunity in less than five years. It is a safe rule to re-vaccinate every five years. If smallpox is prevalent, every person should be vaccinated who has not been successfully vaccinated within five years.

Contraindications to Vaccination

Delicate infants, those having feeding difficulties, those who are syphilitic, those having eczema or other active skin diseases or eruptions should have vaccination deferred until they are in good condition. Acute infectious diseases may interfere with successful vaccination for smallpox, but are not in themselves contraindications in case of possible exposure to smallpox. Patients with tuberculosis are not harmed by properly performed vaccination.

Method of Vaccinating

In young infants it may be easier to protect the vaccine sore upon the leg than upon the arm; in children old enough to run about, and in adults, the arm is to be preferred, as being more easily kept at rest, less exposed to moisture and dust, and the sore heals more quickly.

The multiple pressure or prick method is probably the best. This consists of a shallow, tangential pricking of the cleansed, but not irritated, skin with a sterile needle, through a drop of smallpox vaccine, covering an area not greater than one-eighth of an inch in diameter. This gives little chance of accidental infection and the eruption is typical. Acetone has been found satisfactory for cleansing the skin. It is somewhat more efficacious and rapidly drying than alcohol. The needle, which should be

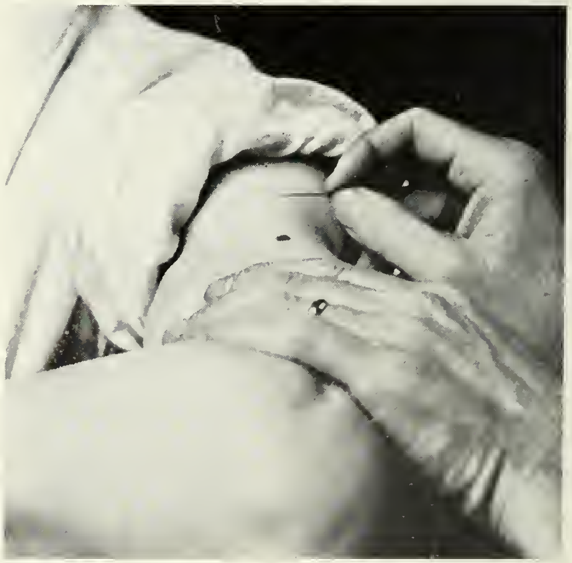


Fig. 1. Smallpox vaccination. Multiple pressure method. Needle tangential to skin, crosswise the arm.

new, sharp, and sterile, is not thrust into the skin, but is held quite parallel or tangential to it, with the forefinger and middle finger of the right hand above the needle and the thumb below, the needle pointing to the operator's left. The needle should be crosswise the arm so that the thumb of the operator is not impeded by hitting the skin. The side of the needle point is then pressed firmly and rapidly into the drop about thirty times within five seconds, the needle being lifted clear of the skin each time. This rapid to-and-fro motion of lifting the needle and pressing it against the skin should be quite perpendicular to the skin and needle, and not in the direction of the needle. In this way the elasticity of the skin will pull a fraction of an inch of epidermis over the point of the needle at each pressure, so that the vaccine is carried into the deeper epithelium, where multiplication takes place most easily. If the skin has not been unduly rubbed in cleansing, and if the motion is entirely perpendicular to the needle, no sign of bleeding will occur and all evidence of the punctures will fade out in less than six hours. Immediately after the punctures have been made the remaining vaccine is wiped off the skin with sterile gauze. Do not apply any dressing to the arm. A square of sterile gauze may be attached to the inner surface of the sleeve over the site of the vaccination and replaced daily with a fresh square until the sore heals.

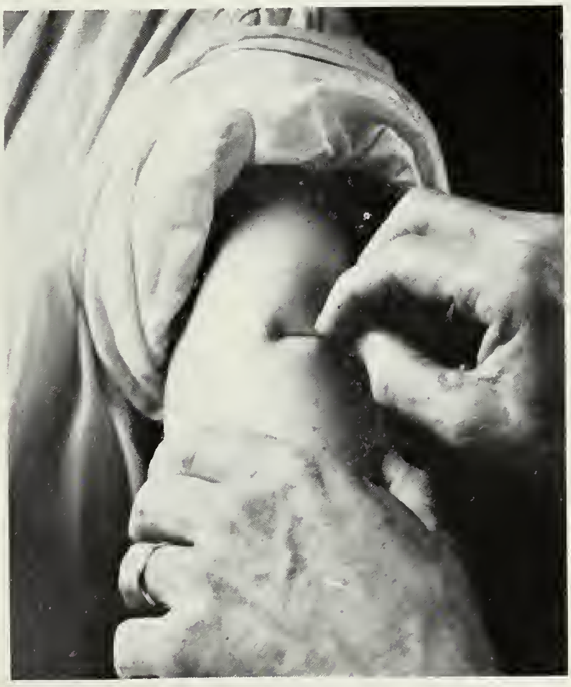


Fig. 2. Smallpox vaccination. Multiple pressure method. Position of needle as pressure is made. Pressure made with side of needle point.

If the vaccination fails to "take," it should be repeated every two weeks until successful, as this does not indicate that the patient is immune to smallpox, unless he has a recent successful vaccination. The failure may be due to virus that has deteriorated or to faulty technic.

TYPHOID FEVER

Active immunity to typhoid fever (and paratyphoid fevers A and B) may be artificially induced by injecting killed typhoid and paratyphoid bacilli into the subcutaneous tissue. This so-called "vaccination" against typhoid fever is now a procedure of established worth, rational, harmless, and effective. The vaccine is a suspension of killed bacilli in salt solution with an added preservative. As usually prepared, the vaccine contains not only typhoid bacilli, but paratyphoid A and paratyphoid B bacilli. The vaccine deteriorates with age and on exposure to heat. It should not be used after the expiration date given on the package by the manufacturer, and until used should be kept in the refrigerator at a temperature of about 40 degrees F.

INDICATIONS

Typhoid vaccinations should be given when the child is two years of age, and repeated at least every three years thereafter. It may be given at any age, even to infants under one year of age, if they are exposed to infection. The administration of the vaccine does not increase the susceptibility to the disease; therefore, there is no known objection to giving this prophylactic to those exposed to the disease, or during an epidemic. Typhoid vaccine does not sensitize the patient, and its use is no contraindication to its repetition, or to the giving of other vaccines or sera.

Dosage and Administration

The vaccine is given hypodermically, using sterile syringe and needle. Do not use the same needle on two or more patients without boiling it each time before use. Three doses are given into the subcutaneous tissue over the insertion of the deltoid muscle. The period between the inoculations is one week. For adults, the first dose is 500 million, the second and third doses 1,000 million each, typhoid bacilli. While children may take this dose, the following dosage is suggested:

Under 3 years of age	¼ adult dose
3 to 6 years of age	½ adult dose
6 to 12 years of age	¾ adult dose
Over 12 years of age	adult dose

Harmless febrile reactions may occur in a small per cent of adults. Infants and small children show slight reaction, if any.

The immunity conferred by typhoid inoculations lasts from one to four years. While some patients take the vaccination each year without apparent harmful results, it should be repeated at least every three years. This procedure protects against the average dosage of infection. An overwhelming infection with typhoid bacilli may be acquired and typhoid fever develop in spite of the inoculation.

DIPHTHERIA

Diphtheria is preventable by methods that are simple and easily applied. The materials used are (a) diphtheria toxoid, a solution of diphtheria toxin to which formalin is added and the mixture heated; (b) diphtheria toxin-antitoxin, a mixture of diphtheria toxin and antitoxin; (c) Schick test solution, a solution of diphtheria toxin in salt solution. All of these preparations deteriorate with age and should not be used later than the expiration date placed on the package by the manufacturer. Heat damages them; hence, they should be kept in a refrigerator or frigidaire, but not against ice or coils, as freezing may so change some of these materials as to make their use dangerous.

Indications

Since practically all children between the ages six months and six years are susceptible to diphtheria, they should be given immunizing treatment. Children over six years of age and adults should be given a Schick test to determine whether they are immune or not, and those found susceptible to the disease should be immunized. Most infants under six months of age and most adults are immune. The age group one to six years furnishes most cases of diphtheria and most of the deaths. It has been estimated that the immunization of one child in the first five years of life is equal in its effect upon the diphtheria death rate to the immunizaion of three school-children.

Schick Test

This test is used to determine whether a patient is susceptible to diphtheria or not. It is performed by injecting into the skin, not under it, 1/10 c.c. of Schick test solution. A tuberculin or other glass syringe calibrated to 1/10 c.c. and steel needle, size 26 or 27, may be used. These should be sterilized before use. Cleanse an area on the flexor surface of the forearm with alcohol or ether. With the left hand grasp the patient's forearm, drawing the skin tightly over the site of injection. The needle is introduced between the layers of the skin with the bevel or opening upward. If prop-

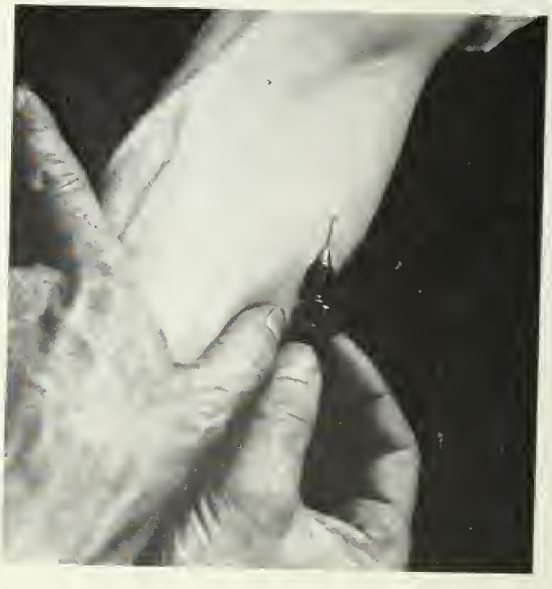


Fig. 3. Schick Test. Needle in position, lying almost flat against skin of forearm, point between layers of skin.

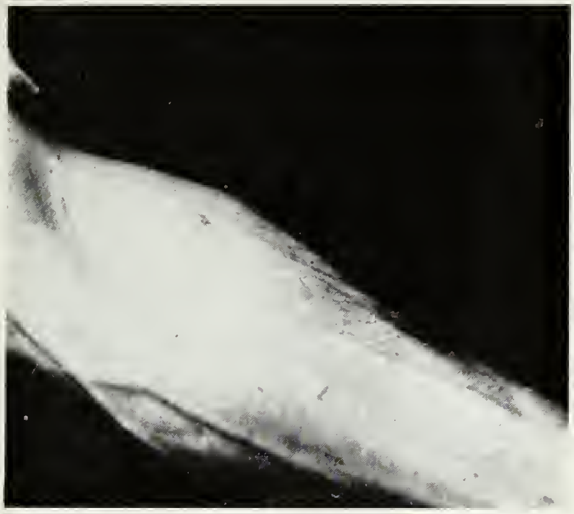


Fig. 4. Schick Test. Wheal produced by injection between layers of skin of 1/10 c.c. Schick Test solution.

erly done, the opening can be seen through the upper layer of the skin. With the needle in this position, the injection of 1/10 c.c. Schick test solution is made, this producing a small, slightly raised, white wheal that disappears in about one-half hour. No dressing is needed.

Interpretation of Schick Test

If the patient is susceptible to diphtheria, an area of redness and slight swelling will appear about the point of injection, varying in size from that of a dime to a quarter in from twenty-four to thirty-six hours. This reaction reaches its maximum in four to six days, then slowly fades, leaving a scaly, brownish area that may persist some days. This is a positive Schick test.

If the patient is not susceptible to diphtheria, there is no reaction at the site of injection more than that made by the needle puncture. This is a negative Schick test.

Occasionally a false or pseudo reaction occurs at the point of injection. It is due to the sensitiveness of the patient to the protein in the toxin. This differs from the true reaction in that it appears within twelve to eighteen hours and fades in three to four days. For this reason reading of the result of a Schick test should be made on about the fifth day after the injection.

The Schick test is used in all patients over six years of age to determine if they are susceptible to diphtheria before giving immunizing treatment.

Patients who have taken immunizing treatment for diphtheria should have a Schick test made six months afterwards to determine if immunity has been acquired. If not immune, the treatment should be repeated until a negative Schick is obtained.

Immunization

Diphtheria toxoid and diphtheria toxin-antitoxin are the preparations used to produce active immunity to the disease. Immunity produced by these agents was found to exist ten years after receiving immunizing treatment in 80 per cent of cases, and it is believed that it is probably permanent in them. Toxoid is probably more effective than toxin-antitoxin, in that it produces immunity in 90 to 98 per cent of cases, while toxin-antitoxin produces immunity in 50 to 80 per cent of cases. Toxoid produces immunity in two to four months; toxin-antitoxin may require six months for its full effect.

Administration of Toxoid

Toxoid may be obtained in ampoules, each containing one dose, or in rubber-stoppered bottles containing several doses. It is usually given in two doses of 1 c.c each. The interval between doses is usually three weeks, though some observers report a higher per cent of immunes if the interval between doses is one month. Toxoid is given subcutaneously, using a sterile syringe and needle of small caliber, just as any other hypodermic is given, care being taken to cleanse the skin with alcohol. If several patients are given injections at the same time, the same needle should not be used on all patients unless it is sterilized before each injection. Toxoid is without local or general reaction in infants and children under seven years of age. In older children and adults there may result from the use of toxoid, reactions that are unpleasant, but harmless, much like the reactions from typhoid vaccine. Toxoid contains no serum or other animal protein likely to sensitize to a later therapeutic serum or vaccine injection. Toxoid is not affected by freezing.

Administration of Toxin-Antitoxin

Diphtheria toxin-antitoxin may be secured in ampoules containing one dose each, or in bottles of larger amounts. The dose is 1 c.c., repeated each week until three doses are given. It is given subcutaneously, using a sterile syringe and needle of small caliber after cleansing site of injection with alcohol or ether. Do not use the same needle on several patients without boiling it before each injection. An occasional patient may have a slight febrile reaction following use of toxin-antitoxin. Many writers advise the use of toxin-antitoxin in older children and adults, rather than toxoid, because toxin-antitoxin is less likely to produce a reaction. Toxin-antitoxin contains a small amount of serum, and it is thought that in some patients sensitiveness to that serum may be produced. It is advised that, if possible, toxin-antitoxin made from sheep serum be used to avoid sensitization to horse serum. Then if the need arises to use later, tetanus antitoxin, scarlet fever antitoxin, or other products from horse serum, there will be no danger of allergic reaction to horse serum. Diphtheria toxin-antitoxin should not be used after it has been frozen. To do so would endanger the life of the patient.

Management of Diphtheria Contacts

Children of susceptible age in contact with a case of diphtheria should not be given toxoid or toxin-antitoxin with a view to protecting them against the exposure. If they can be observed daily, they should be watched closely and at the first sign of sore throat given a curative dose of antitoxin. If they cannot be kept under close observation, they may be given a prophylactic dose of antitoxin, and after two months toxoid or toxin-antitoxin may be administered.

RABIES

Rabies is prevented by the prompt administration of the Pasteur treatment. The material used in this treatment is a sterile four-per-cent emulsion of killed rabies fixed virus from the brains of rabbits that have been inoculated with rabies. The virus should be kept at a temperature of about 40 degrees F. until used. It is not affected by freezing. If properly stored at above temperature, the virus retains its immunizing properties for two or three months.

Indications for Treatment

All persons bitten by dogs or other animals known to have or suspected of having rabies should be treated. Persons handling such animals, or objects recently contaminated by the saliva of such animals, may acquire infection through abrasions of the skin, hangnails, or chapped skin, and should take Pasteur treatment. The saliva of a mad animal is infectious at least four days before the animal shows clinical symptoms, and possibly as long as eighteen days before symptoms develop. The incubation period of rabies is variable, as a rule being from twenty to sixty days, sometimes longer. In cases of bites on the face or head, the incubation period may be as short as twelve days.

Administration of Treatment

The administration of Pasteur treatment is a very simple matter. It consists of giving an injection of the virus subcutaneously, under the skin of the abdomen, each day, preferably at about the same time of day. There are two methods in general use: (1) the original Pasteur method, which consists of twenty-one daily doses, each of which i numbered, and must be given consecutively according to the numbers, the contents of one vial being one dose; (2) the Semple method, which consists of fourteen daily doses, all just alike, which may be given without regard to order of dose, the contents of one vial being one dose. The Semple method is fully as efficient as the Pasteur treatment and is tolerated by most patients with little or no inconvenience. In severe bites and bites about the head or neck the fourteen-dose method may be supplemented by giving seven or fourteen more doses just like the first ones.

There is no contraindication to the use of either method. While taking treatment, it is advised that the patient avoid alcoholic beverages, excessive fatigue, and chilling of the body by cold baths.

The maximum immunity following administration of the Pasteur treatment or Semple vaccine is reached about two weeks after the last dose. This immunity lasts for a comparatively short time, at the longest probably not more than a year. If a person is reinfected, the treatment should be repeated.

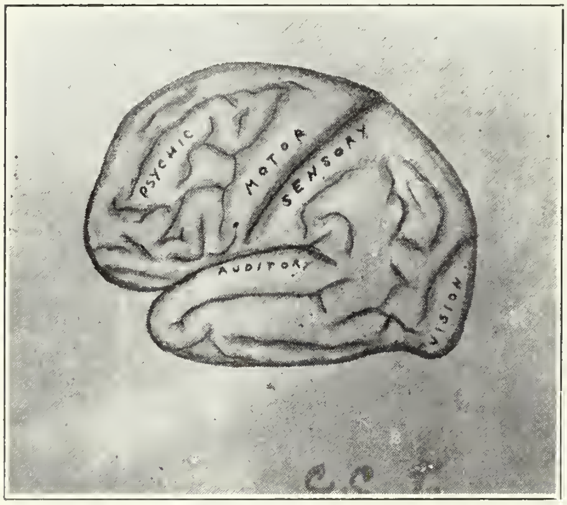
If the patient has previously taken Pasteur treatment by either method, he should be tested for sensitiveness to the virus by injecting one drop of the virus intradermally and observed for twenty minutes for a reaction. If no redness or swelling occurs at the site of injection after twenty minutes, the full dose may be given as usual. If there is redness and swelling at the site of injection, the patient should be desensitized as follows: Inject 0.1 c.c., wait forty minutes and inject 0.2 c.c., after forty minutes inject 0:4 c.c., etc., doubling the dose every forty minutes until one full dose has been given. On the succeeding days the full dose may be given at one injection. The giving of Pasteur treatment does not sensitize the patient to other vaccines or sera.

When a person is bitten by an animal, suspected, but not known to be mad, the wound should be cleansed and an antiseptic dressing applied. Do not kill the animal, but confine him for observation. If the animal has rabies, he will die within two weeks, and the patient should take Pasteur treatment. If the animal lives two weeks, the person bitten does not need Pasteur treatment.

THE NEUROLOGY INTERPRETATION OF SOME OF THE MORE COMMON CLINICAL CONDITIONS*

C. C. TURNER, M.D., Memphis

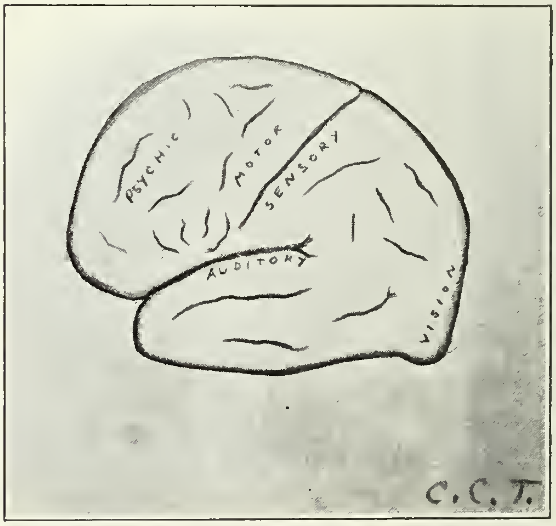
NEUROLOGICAL symptoms and signs often form the most prominent features of many clinical conditions which are not primarily affections of the nervous system. Yet in the analysis of these conditions it appears that the nervous system is not receiving the consideration it is due by the investigators and students of such conditions. Much has been written and said in regard to the pathological findings in the kidneys, liver, heart and lungs. The biochemistry and metabolic studies have been exhaustive. Yet the effects of any one or all of these upon the nervous system with their resultant glaring symptoms have been passed by with a few brief references of a speculative nature. Acosta-Sisson, in 45 cases of autopsied eclampsias, examined the brain in only 16 cases. Studies of capillary permeability, blood volume and hydrostatics within the skull have received impetus by the work of such investigators as Fay, Winkelman, and Malamud. Ranson, Hassin, and Tilney have previously opened up the way for such investigations by the knowledge they gave us of the minute anatomy, blood supply and excretory apparatus of the neuron. As a result, many of the neurological symptoms and signs which appear in such conditions as eclampsia, uremia, tetany and the toxic psychoses can be explained upon a physiological basis.



1. Illustration of Normal Brain, Showing the Chief Functional Gyri and Sulci.

A normally developed organ or set of organs under normal conditions will function normally. This holds just as true of the nervous system as of any other organs of the body. Therefore, when such symptoms as convulsions, deafness or abnormal sounds, visual disturbances, numbness or abnormal sensations or pathological behavior appear, dysfunction of a part or all of the brain is obvious.

The terms functional and idiopathic have been ascribed to a variety of Neurological conditions. These terms have covered more or less loosely those conditions in which there have been no demonstrable gross or microscopic changes in the nervous system



2. The swollen or edematous brain, illustrating ironing out of the cortex with chief gyri and sulci packed and crowded together by greater increase of water content. A dysfunctioning brain.

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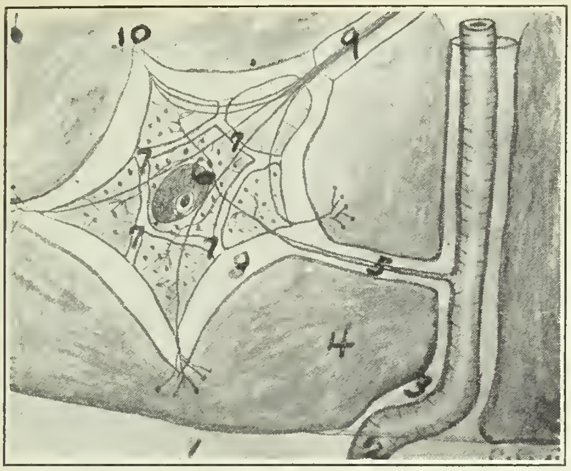
*Read before the Tennessee State Medical Association, Memphis, April 12, 13, 14, 1932.



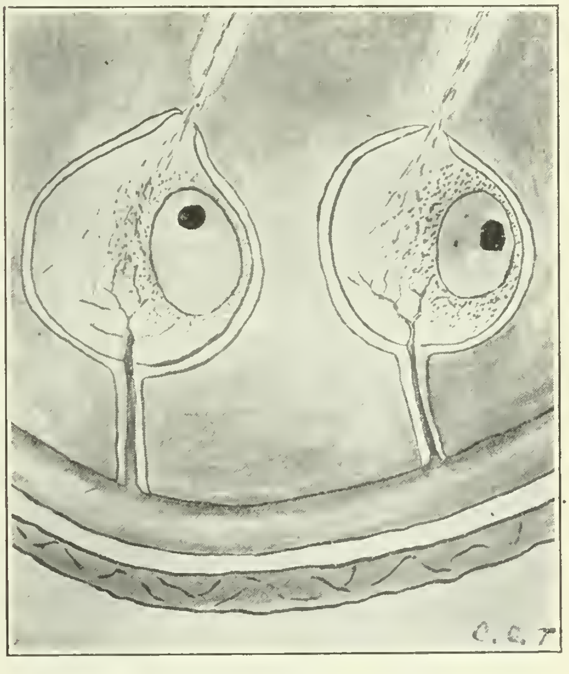
3. A normal neurone within normal brain tissue, illustrating its blood supply and excretory apparatus.

(1) Subarachnoid Space; (2) Artery; (3) Perivascular Space. Emptying into Subarachnoid Space; (4) Normal Gyrus; (5) Arteriole to Neurone; (6) Nucleus, Cytoplasm, Granules of Neurone; (7) Holmgren-Golgi Canals, Emptying into Pericellular Space; (8) Pericellular Space, Emptying into Perivascular Space; (9) Axone; (10) Dendritic Processes.

to which such conditions could be ascribed. In such cases we have limited our consideration and final conclusions to the report of the pathologist who is dependent entirely upon gross or microscopic morphological changes from the normal. The fallacy of such a viewpoint is easily developed when we consider the number of possible physiological dysfunctions of the nervous system which do not show any gross or microscopic changes, with the exception of edema and swelling. Physiological dysfunction of the neuron occurs under a wide range of abnormal conditions, and, as a result, neurological symptoms appear in a great variety of conditions. The offending mechanism may progress in intensity or may be prolonged in extent until death of the neuron takes place. After this the neurological state is permanent. Fortunately, however, the neuron recovers its normal function with the return of normal conditions. This accounts for many of the well-known remissions. Whatever the mechanism of fever therapy, it reëstablishes the normal physiological function of the neuron with the resultant regression of symptoms referable to the central nervous system.

The functioning cells of the nervous system — the neurons — receive their blood supply from end arterioles. They have no venules or return blood supply, but depend upon their own excretory apparatus for ridding themselves of their own waste products as well as noxious substances in the arteriolar stream. Therefore, any mechanism which causes an impoverishment of the blood supply or a change from the normal constituency of the blood will have its effect on the normal function of the neuron. Likewise any mechanism which will dam or impede the secretory apparatus, or excretions from the cell, will also affect the normal function of the neuron. Of all the constituents of the blood, the most important of the neuron is oxygen.

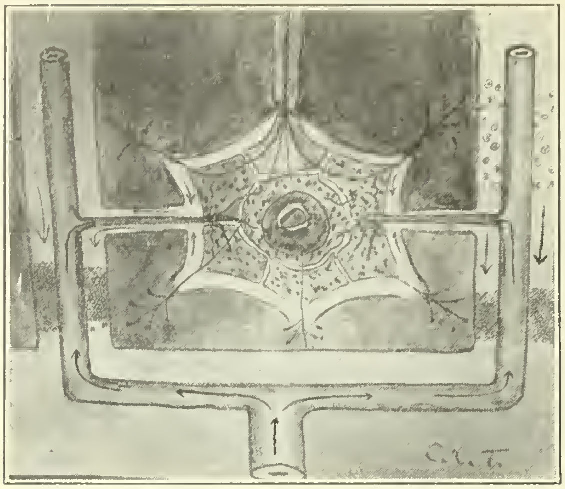
It has been demonstrated that the length of life of a neuron after cutting off its oxygen is 5 to 7 minutes. Many causes of death can be ascribed to anoxemia. Many neurological symptoms result from an insufficient



4. Swollen neurones of brain as of Fig. 2, illustrating

(1) Eccentrically placed nucleus; (2) Breaking up of granules; (3) Interruption and disappearing neurofibrillæ, or conducting apparatus; (4) Obliteration of cytoplasmic canals; (5) Obliteration of pericellular space; (6) Damming and blocking of subarachnoid drainage of perivascular space from swelling.

A neuron in this state suffers impoverishment of fresh arterial blood or anoxemia. It is unable to rid itself of its own CO_2 and waste products, and it is in a state of dysfunction. It may remain in this state a long time before it dies and can return to a normal condition.



5. Beginning perivascular invasion of cells.

These cells form sleeves around the vessels. These sleeves impede blood flow to the neuron and it suffers anoxemia. These sleeves also dam the perivascular spaces, causing back pressure on the neuron and embarrassing its proper drainage of excretia. This is what happens in paresis and in encephalitis. If process continues, death of the neuron is inevitable.

amount of oxygen. Remembering this fact, we can offer a rational explanation for the psychoses that frequently complicate a severe pneumonia, where the oxygen content of the blood is greatly impoverished. The same is true in the psychoses that frequently complicate the decompensated heart with passive congestion and venous stasis and deficient areation in the alveolar air spaces of the lungs. Thymic death may be attributable to anoxemia of the neurons forming the neuro-respiratory mechanism as a result of blocking off the jugular system, and, as a result of this, venous stasis within the skull.

The brain is one of the great water storehouses of the body. A variety of conditions alter the ratio of brain substance to water content. The association of convulsions with cerebral edema is well known. It is said that the convulsive state never occurs in a dry brain. Convulsions are not uncommon in states of so-called dehydration, but investigators have shown that in these so-called dehydrated states the brain may be endematous.

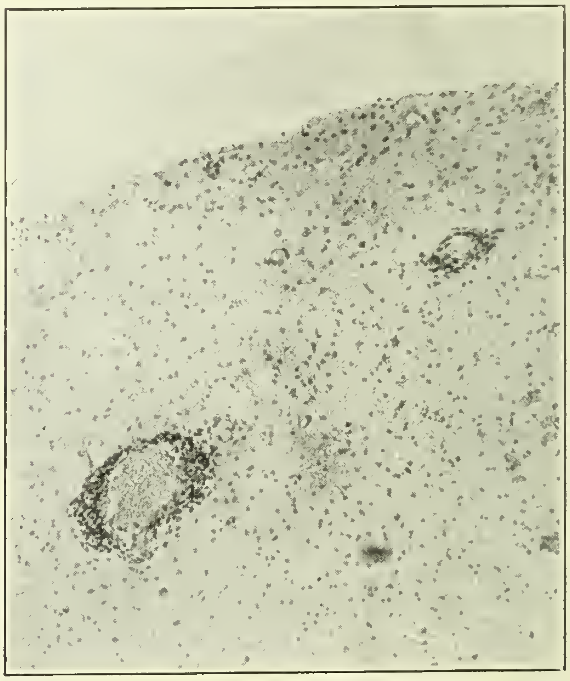
Convulsions are the outstanding symptom in eclampsia. There are as many theories and explanations for the eclamptic state as there are authors. From a neurophysiological standpoint, the following are most attractive, for they at least explain the possible physiological disturbances in the brain:

1. That the endocrine upset incident to pregnancy exerts its influence through the sympathetic nervous system. As a result of this, the vasomotor mechanism is upset with vaso-dilation and a seepage of blood water into the brain, or with vaso-constriction and a decrease in oxygen to the brain.

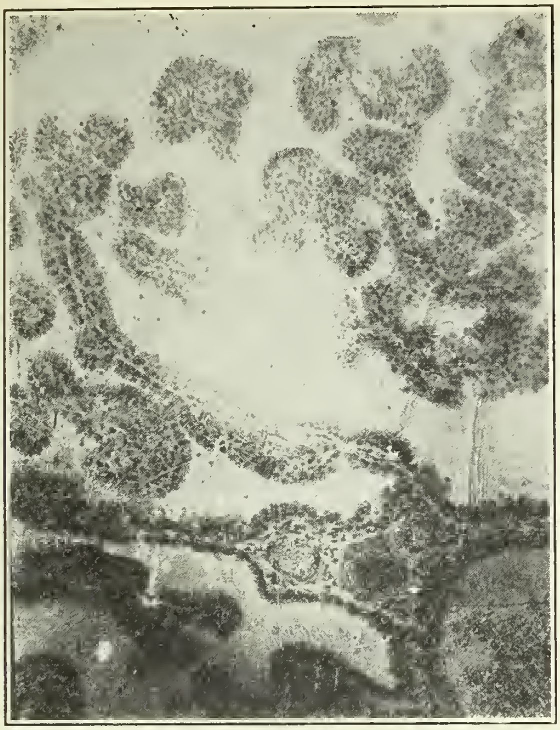
Eastman believes that the high globulin content in the urine of eclamptics indicates an increase in capillary permeability, with edema as the result.

Laferty offers the glucose deficiency theory of Titus as a rational explanation for most of the phenomena observed in eclampsia. But this may be another way of saying that the blood fluid is hypotonic and seepage is taking place through the capillaries into the interstices of the brain and other organs or greater isotonicity.

Dieckman finds that increased concentration of the blood is the most constant find-



6. Microphotograph of section of mid-brain in epidemic encephalitis, illustrating cellular invasion and intensive perivascular infiltration.



7. Microphotograph of choroidal plexuses, illustrative of their swelling and cellular engorgement in acute post-influenzal encephalitis.

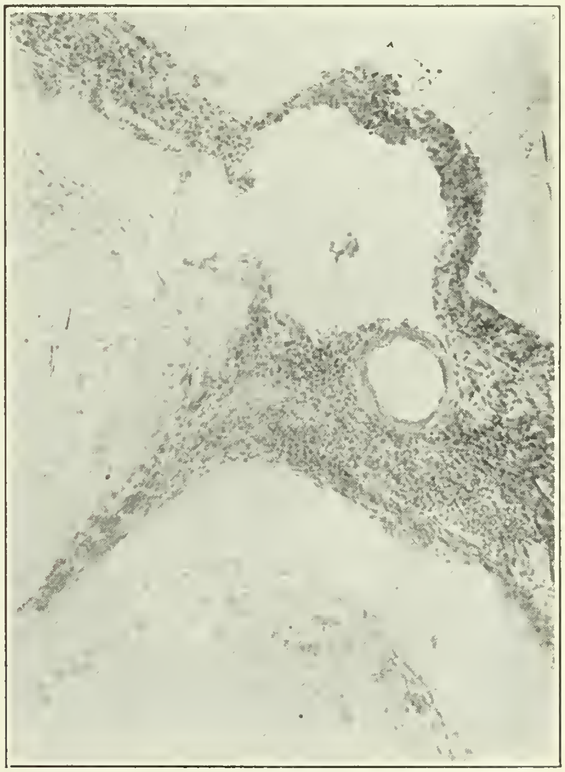
ing in eclampsia, with lowered blood volume. This increases the viscosity of the blood and slows down its circulation. This results not only in anoxemia, but also in tissue acidosis. Also as a result of diminished blood flow through the tissues and organs, waste products accumulate which are normally secreted by the kidneys. As a result of the concentration of the blood, the clotting time is shortened with thrombosis and its effects.

All of these theories arrive at the same physiological conclusions.

1. That there is an increase in brain water.
2. That there is a lessened blood oxygen.
3. That there is an accumulation of waste products within the blood stream. It is known that these waste products, chiefly the products of protein metabolism, are motor neuron stimulants. The results of any one or all these combined is a condition of convulsions with or without coma.

The psychoses of the three stages of the puerperium may be explained upon the same physiological basis, with a difference in location within the brain for the physiological upset.

Traube in 1861 was impressed by the presence of cerebral edema and thought that it was a cause for uremia. Since then there have been many ingenious explanations for the cerebral symptoms in uremia. Fishberg and Oppenheimer describe the uremia of cerebral arteriosclerosis and call the condition hypertensive encephalopathy. In this condition cerebral arteriosclerosis is marked. Cerebral crises are common, and consist of transient phenomena, whose symptoms depend upon spasms of the arteries in certain locations of the brain, or cerebral angiospasms. Fainting attacks, transient blindness, or hemianopsia, temporary hemi-anesthesias result. Motor symptoms are sudden onsets of weakness or paralysis of one or more extremities, usually hemi-plegias, weakness of one side of the face and aphasias of short duration.



8. Meningeal invasion of cells and engorgement of blood vessels.

This process was associated with encephalitis.

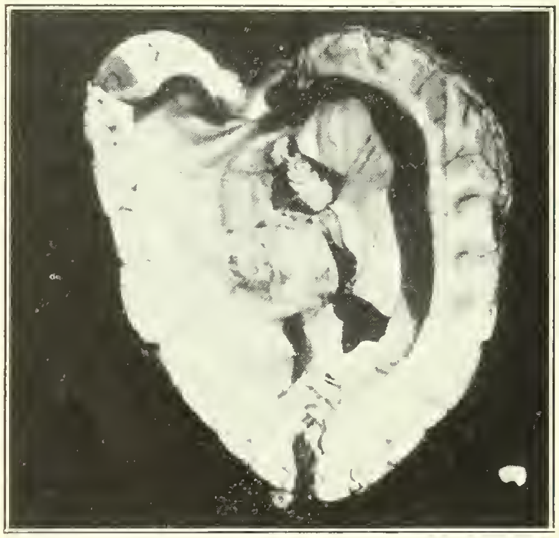
McLester sums up the causes for cerebral edema as one of the following:

1. A disturbance of salt content in the blood.

2. An alteration in the permeability of the capillary walls.

3. An accumulation of chlorides in the tissue spaces.

The result of cerebral edema is an increase in intracranial pressure. On account of its being incased in a covering of non-resistant tissue bone, the amount of expansion allowed the contents of the skull is relatively small. When the limits of this expansion have been reached—that is, when the swollen brain is pressing out against the walls and floor of the skull—the pressure constricts and occludes the arteries and capillaries. This decreases arterial blood and oxygen destined for the cortex and nuclei of the brain, and, as a result of this, anoxemia is present. Coma results, and if intracranial pressure is not relieved, death of the neurons takes place, with softening and scar tissue replacement in the brain. Such a condition will lead to permanent residuæ, and among the most prominent of these are epilepsy, psychoses and mental deterioration.



9. Internal hydrocephalus resulting from meningitis as illustrated in Fig. 8.

Organization and scar tissue replacement sealed over the normal foramina of exit from the brain ventricles, allowing no escape for the ventricular fluid. Hydrocephalus results from intraventricular pressure.

Certain substances elaborated by the body and circulating in the blood have definite influences upon the nervous system. Among these are calcium, magnesium, phosphorus and the end products of protein metabolism, particularly the anino-acid group. Tetany is not an uncommon motor phenomenon in which blood calcium is low. Magnesium is decreased and guanidin is increased. In five cases of so-called idiopathic epilepsy recently studied and now under observation, the blood calcium was below normal. It has also been shown that the magnesium content of the spinal fluid remains at a constant level, even when this substance is deficient in the blood. It may be reckoned then that among its many functions, sedation or maintaining a proper balance between stimulations and sedation of the motor system is one function of the spinal fluid.

In summary, a more thorough study of the relationship of the nervous system to other organs and systems is necessary for a more comprehensive interpretation of the most prominent symptoms, which occur in a variety of conditions. We are not dependent for neurological symptoms upon pathological processes of the nervous system alone. Neurological dysfunction may result without any gross or microscopical lesions demonstrable in the nervous system. A large percentage of neurological diseases are incurable. But a much larger percentage of neurological conditions are amenable to treatment and offer dramatic results for him who makes a study of neuro-physiological dysfunction and its association with other diseases.

BIBLIOGRAPHY

1. Acosta-Sisson—Am. Journal of Obstetrics and Gynecology, Vol. XXII, July, 1931.

2. Kubie, L. S.—Arch. Neurology and Psych., June, 1928, p. 997.

3. H. S. Forbes and H. G. Wolff—Arch. Neurology and Psych., June, 1928, p. 1057.

4. John M. Laferty—Am. Journ. Obst. and Gyn., Vol. XXII, p. 637.

5. W. J. Dieckmann—Am. Journ. Obst. and Gyn., Vol. XXII, p. 351.

6. N. J. Eastman—Am. Journ. Obst. and Gyn., Vol. XXII, p. 756.

7. Stanley Cobb and Frank Fremont-Smith—

Arch. Neurology and Psych., Vol. 26, October, 1931, p. 731.

8. Soma Weiss and William G. Lennox—Arch. Neurology and Psych., Vol. 26, October, 1931, p. 737.

9. Edward Allen Edwards—Arch. Neurology and Psych., Vol. 26, October, 1931, p. 801.

10. H. O. Mosenthal—Oxford Mon., p. 516.

11. James S. McLester—Oxford Mon., p. 52.

12. Arthur M. Fishberg—Hypertension and Nephritis.

DISCUSSION

DR. R. B. WOOD (Knoxville): Mr. Chairman and gentlemen, I feel that the average man in the practice of medicine knows far less about neurological conditions than any other type of medical disease. I further fear that those who specialize upon Neurological conditions perhaps are unable to as carefully analyze and classify neurological diseases as those who specialize upon other systems. From the neurological standpoint, diseases may be either organic or functional; and although that word "functional" is far from a term that we desire to use when pertaining to diseases, we cannot, I think, get away from the fact that we must still use it to describe many conditions. For instance, in the edematous injuries of the brain in which there is acute injury we find perhaps the best example of what edema will do and what symptoms will be produced by edema. On the other hand, we have the convulsive states in which localized edema may be occasionally found post mortem; I think that in the latter group we still must speak about those diseases from a functional standpoint. Later, perhaps, we will be able, from the results of studies of biochemistry and physiology, to more accurately classify them and get away from that term "functional diseases."

We do not yet find an agreement between all the men working upon neurological diseases even in respect to the anatomical and the physiological portions of the brain. The author mentioned the rôle of the choroid plexus in the production of the spinal fluid. There is even disagreement among the leaders in neurological work as to the origin of the spinal fluid. While the choroid plexus may not be the sole producer of spinal fluid, it undoubtedly plays a similar rôle to this that the thyroid plays in metabolic disturbances in the body, and seems to be the chief point of attack when dealing with such diseases as hydrocephalus of the obstructive type.

DR. C. C. TURNER (Memphis): I wish to emphasize again the point referred to by Dr. Wood. We must consider a so-called functional disturbance as a physiological disturbance regardless of physical signs, symptoms, or normal appearance of tissues. Probably better termed for functional disturbance would be a dysfunctional syndrome.

"SINUSITIS"*

Eugene Orr, M.D., Nashville

CHRONIC sinusitis is a serious condition with far-reaching effects. Operations for chronic sinusitis constitute approximately 10 per cent of all ear, nose and throat operations. Sinusitis always has a beginning, and if chronicity can be prevented, much good will be accomplished. It was with these thoughts in mind that the preparation of this paper was undertaken.

The sinuses are air cavities communicating with the nose by means of small ostia. By the location of these openings they are classified into an anterior and a posterior group. The attachment of the middle turbinate is the dividing line. The ostia of the anterior group open just beneath the middle turbinate. Those of the posterior group open above and behind this structure. The anterior group comprises the antra, the frontals and the anterior ethmoids. The posterior ethmoids and the sphenoids constitute the posterior group. The ethmoid sinus consist of a variable number of air cavities (two or three to ten or twelve), arranged somewhat on the order of a honeycomb. Each cell has an opening, though one cell may empty into another before emptying into the nose. The capacity of the ethmoidal sinus averages from eight to ten cubic centimeters. The antrum or maxillary sinus is the pneumatized portion of the superior maxillary bone; it is pyramidal in shape, its base being formed by the lateral wall of the nose; its capacity averages from ten to eighteen cubic centimeters. The frontal and sphenoid sinuses are the air spaces in the frontal and sphenoid bones, respectively. Their size varies widely. They may be absent altogether, or on the other hand, there may be a more or less complete pneumatization of these bones.

The sinuses are lined with a membrane which is composed of three layers. The outer layer consists of ciliated epithelium. The wave motion of the cilia is always toward the ostia. A middle or sub-epithelial layer contains the glands, blood vessels and nerves. The blood vessels and nerves, for the most part, enter the sinuses through their ostia, within the membrane. The periostium constitutes the third layer. This membrane lining the sinuses is directly continuous with that of the nose. It differs in structure in that it is thinner. The glands are less numerous and are arranged more in clusters than they are in the nose. It is also devoid of erectile tissue.

The sinuses normally are sterile, which argues that under normal circumstances they secrete a substance which is inhibitory to the growth of bacteria.

The location of the ostia precludes drainage by gravity in the case of the antra and sphenoids. Drainage is accomplished by the cilia plus self-induced negative pressure.

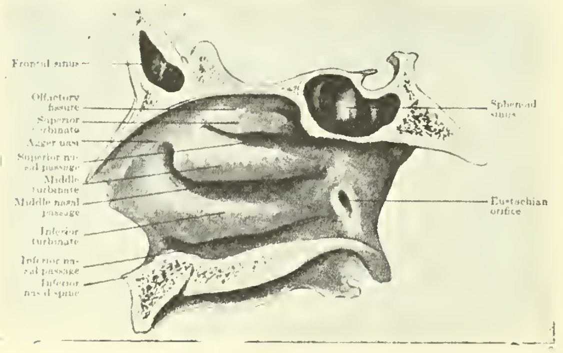


Fig. 1. Lateral wall of nose.—Skillern.

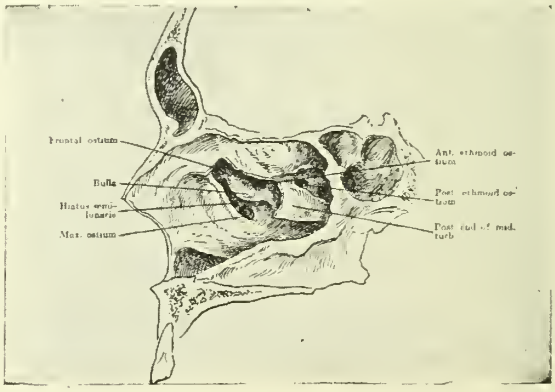


Fig. 2. Lateral wall of nose with anterior portion middle turbinate removed.—Skillern.

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*Read before the Tennessee State Medical Association, Memphis, April 12, 13, 14, 1932.

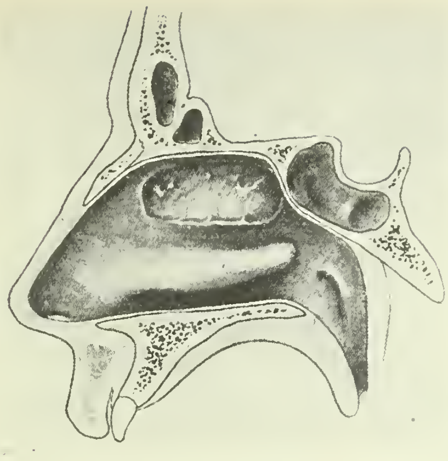


Fig. 3. Showing space occupied by ethmoid cells. —Phillips.

As to the function of the sinuses, one can only theorize. Whether in prehistoric man they did this or that, or what part they play in the general mechanism of immunization is not known. What we do know is that they communicate with the nose by means of ostia and through their ostia there is an exchange of air. If, for any reason, there is a failure of the normal bactericidal action of the mucosa and its secretions, or if the mechanical removal of noxious agents by ciliary activity ceases, then these cavities become incubatory chambers where all conditions are favorable to bacterial growth. The lining membrane then becomes thickened, the glands become swollen and may suppurate, even the underlying bone may become necrotic.

Concerning the bacteriology. Some fifteen different organisms have been found as predominating in sinus infections. So it would seem that the question of bacteriology, per se, does not mean a great deal.

The course of sinusitis, while variable, is determined by several factors. Clinically these cases fall into one of several groups.

First. There is a small group of cases which arise by a direct extension from an involved nasal mucosa in the more severe infectious diseases, such as scarlet fever, neglected nasal diphtheria and perhaps in erysipelas. In this group the tendency is toward chronicity. One attack often results in a chronic sinusitis.

Second. Those cases associated with diseases, infectious and otherwise, in which the nasal mucosa is not involved. Their involvement depends upon the lowered general resistance. Bacteria (always present in the nose) gain entrance to the sinus and finds a suitable media, the defensive factors having been weakened. In this group, symptoms referable to the sinuses are mild, they may be so mild as to be overlooked altogether. From this group, if we include influenza, come practically all of those cases we see which have a chronic sinusitis, and yet give no history of having had a definite acute attack. It is probable that from this group we get our best results from surgical procedures which involve drainage only, that is, those procedures which do not molest the sinus mucosa.

Third. Influenza, on account of its prevalence and the frequency with which it is associated with sinusitis, deserves special mention. Here we have factors common to both of the above groups. A fairly large percentage of chronic sinus cases date their onset from an attack of influenza. These may, or may not, present definite symptoms which we usually recognize as those of acute sinusitis.

Four. Swimmers and divers. In this group subjective symptoms seem to be particularly severe.

Five. Those milder upper respiratory infections as exemplified by the so-called "bad cold." Here, a majority of the acute cases will clear up without any particular treatment. Practically all will clear up with proper treatment. It is unusual to see chronic sinusitis as having developed from a bad cold, without also giving a history of having had more than one such attack. The greatest number of sinus cases are found in this group.

From the foregoing, it is obvious that sinusitis occurs as a complication of, or in association with, some condition which will be treated by a general practitioner. His management of the case, not only from the standpoint of the general condition present, but with reference to the acute sinus, will largely determine whether or not a chronic sinusitis develops.

Bear in mind that the sinuses are quite capable fighters in resisting infection, so it would seem that some predisposing factor should be looked for, and especially does this apply to those cases associated with the less virulent infections. The predisposing factors more often found in connection with sinusitis are:

First, food deficiencies, more particularly the fat soluble vitamins. Especially applicable is this to children.

Second, allergy.

Third, anatomic factors, such as a congenitally narrowed nose or high deviation of the nasal septum.

Fourth, endocrine imbalance.

In fact, any condition which in any way interferes with ventilation or drainage is a predisposing factor.

The symptomotology of a beginning sinusitis varies widely. As before mentioned, symptoms referable to the sinuses may be so mild that we scarcely recognize them. On the other hand, pain may be so severe as to require large doses of morphia. Those cases in which the symptoms are mild are usually those in which there is little, if any, involvement of the nasal mucosa. Here sinus infections depend upon lowered general resistance. The picture usually presented is that of an individual who has been sick, let us say, with intestinal influenza. From the standpoint of time he should be well, and yet he is not recuperating as he should. He probably has a slight headache some time during the day. His nose is a little stuffy and perhaps there is a scanty postnasal discharge. Generally speaking, he feels quite miserable. The symptoms with which we ordinarily associate acute sinusitis are as follows:

Headache occurs in about one-half of the cases. Pain, which may be almost unbearable, or it may be present only as a heavy, full, numb sensation, is probably the most common symptom. Tenderness, when present over the sinuses, is most helpful in diagnosis; especially is this ture of frontal and maxillary infections. The presence of purulent secretion in the nose does not, necessarily, mean that sinus suppuration is present. If, however, the secretion is wiped away and recurs only at the site of the ostia, it is proof that a sinus is involved. A feeling of stuffiness or fullness in the nose, if persistent, particularly if confined to one nostril, is very suggestive of sinus involvement; this despite the absence or other symptoms. Dizziness or vertigo are not infrequent manifestations of this disease.

Any discussion pertaining to sinusitis without mentioning nose blowing, would be incomplete. So, it is a wise precaution to instruct every patient with an acute upper respiratory infection to refrain from blowing the nose. It can readily be seen how this practice, particularly when the nose is congested, may force infectious material into the sinuses. Instead, have them draw the nasal secretions into the mouth by way of the naso-pharynx. This creates a certain amount of suction, and in so doing, helps the sinuses to empty themselves.

The treatment proper may be spoken of as being systemic and local. Rest, both physical and mental, to the extent of the patient's co-operation, is essential. Fluids should be given in large amounts. In the selection of foods those containing the fat soluble vitamins should be stressed. Sunshine is very beneficial. Ultra-violet therapy is a fair substitute for sunshine. For the relief of pain, aspirin and codein usually will suffice, though morphia may be required. Where available, some form of heat as generated by an infra red lamp, has in many cases proved almost a specific for pain.

As to the local treatment, it is my opinion that a nonirritating astringent must be used in the nose and used often enough to keep the nasal mucosa so shrunk that the sinuses will drain through their normal openings. For this purpose, ephedrine, is, we believe, our most valuable drug. Personally, I prefer the inhalant, made up with the lightest available oil. In all children, and in adults where allergy is suspected, we use only the plain inhalant (those preparations which do not contain menthol, camphor, phenol, et cetera). In adults it is most conveniently administered by means of an atomizer. In using an atomizer, instruct the patient to spray a few times, then wait a few minutes and repeat. The first spraying shrinks the inferior nasal tissues, allowing the second to reach higher up in the nasal cavities. In children, "nasal drops" are preferred. For "nasal drops" to be effective the patient should be lying on the back with the head well extended. Tampons are favored by many. In using any medicinal agent in this manner, great care must be exercised lest the nasal tissues be traumatized.

Every acute sinusitis must be considered as a potential chronic sinusitis. Due regard should be given the factors which predispose to the development of sinusitis. Vaccines are beneficial in a fair percentage of cases. Their administration is justified, especially when there is a history of recurring colds. In this class we routinely prescribe ephedrine inhalant, not for daily use however. This should be kept on hand and used, not casually, but religiously whenever there is evidence of a beginning cold.

We do not believe that surgery, except in rarest of instances, has any place in the treatment of acute sinusitis. A very large majority of the sub-acute cases and many of the chronic cases can be relieved by conservative measures. The chronic sinus patient on whom conservative measures fail, becomes a surgical problem, and many of these remain a problem after surgery has been done.

DISCUSSION

DR. T. LYLES DAVIS (Chattanooga): The term "sinusitis" may be and is often applied or interpreted to cover several similar but distinct and separate diseases of the upper respiratory tract. Symtomatically allergic manifestations and vaso-motor rhinitis are closely allied and often treated for sinusitis.

Allergic conditions are those that manifest their symptoms periodically or when the subject comes in contact with the particular food, pollen, or bacteria that they are sensitive to. Symptoms manifested are sneezing, frequently inflamed and tearing eyes, occluded nasal passages, fluid or watery discharge.

Vaso-motor rhinitis is a condition in which there is a congestion of the mucous membrane of the nasal passages without the usual signs of inflammation, accompanied with a more or less profuse mucoid discharge. Sinusitis is classified as acute and chronic. Acute sinusitis is generally the result or sequela of acute colds, influenza, bathing ponds, and in some cases of pyorrhea or infected teeth that extend into the antrum.

We are not so much concerned with the acute sinusitis, as this condition generally responds to treatment or recovers without treatment, provided it does not terminate in chronic sinusitis.

Acute colds are more or less a self-limited infection with, generally speaking, a duration of from five to ten days. I am of the opinion that an acute cold immunizes against a subsequent attack of acute cold for several months.

Gentlemen, here is a statement you have heard many, many times—I might say almost daily: "Doctor, I don't get over one cold before I have another, and my doctor has given me twenty to forty injections of cold serum, and I'm no better." Whenever you hear this statement you may be assured that you are not dealing with a cold, but, in fact, a sinusitis, a vasomotor rhinitis or one of allergy. Don't misunderstand me, for there are certain selected cases where cold serum is very efficacious. To illustrate this statement: Recently I had a case that had been given approximately fifty injections of cold serum over a period of three years. This case was sensitive to feathers (4 plus). Eliminate the feathers and your patient is happy by such a simple and inexpensive cure.

I have at some length attempted to differentiate sinusitis from other similar nasal infections, so we will pass on to chronic sinusitis, which in the distant past was the "big boy" to the rhinologist.

In chronic sinusitis, with few exceptions, there is no longer pain. The so-called "cold" may still exist, which is evident from a varying quantity of purulent discharge from the nose anteriorally and posteriorally. Posterior pharynx bathed in pus.

Visualize your sinuses as small cavities lined with mucous membrane of ciliated epithelium with the ostium above the floor in all except the frontals, then full of pus or with infected membrane. Here arises the constitutional or focal manifestations—by absorption through the blood stream or lymphatics, gastro-intestinal tract, and last, but not least, by inhalation into the bronchial tree.

The diseases or symptoms that are directly caused from sinus infections are those that can be attributed to any source of focal infection, such as arthritis, rheumatism, iritis, gastro-intestinal disorders, many others, and one sinus bronchus disease that is outstanding and was unrecognized until within recent years. Sinus bronchus infections are one of the most insidious diseases we have to contend with, for here you have the typical picture of tuberculosis without the positive sputum. The following case will demonstrate this point:

J. M. U., a man, age 48, referred by a physician March 5, 1930. He gave a history of having been ill for ten years, virtually unable to attend to his business. Stated that he had been diagnosed by ten physicians as having tuberculosis; rejected for insurance by four medical examiners. He appeared forlorn, dejected, and assumed the picture of despair, malnourished, under weight, insomnia, coughing constantly and expectorating frequently—almost a dram of thick, tenacious pus.

Examination revealed both nostrils virtually occluded by polyps, which were floating in a chamber of pus. Posterior pharynx bathed in pus. Transillumination demonstrated sinuses cloudy. Permit me to read the radiographic report:

Chest: Stereoscopic films show no shadows which can be interpreted as definite evidence of tuberculosis. Calcification at the base of the upper right lobe and in the right lung root area indicates a healed, probably tubercular lesion of the past. The hilum shadows are greatly enlarged and dense, radiating out into bronchial markings which are coarse and extensive, especially toward both bases. This is in keeping with a diagnosis of bronchitis secondary to upper respiratory tract diseases, of which there is abundant evidence in what follows:

Sinuses: There is a complete pansinusitis, I believe predominantly of the chronic purulent type. None of the sinuses appear normal. The right frontal and a few anterior left ethmoid cells contain air. The sphenoid area is completely opaque, with no differentiation of cell borders, which makes it impossible to state whether they are congenitally absent, which is rare, or excessively dense from disease, which seems more probable.

Comment: Pansinustitis, predominantly chronic purulent. The chest shows no evidence of active tuberculosis, but presents the picture of advanced bronchitis, probably with some bronchiectasis.

March 14, 1930, polys removed, floor of ethmoids curetted. April 23, 1930, bilateral radical maxillary (Caldwell-Luc) operation with exenteration of ethmoids. He made a prompt and uneventful recovery. Has gained forty-five pounds, no cough, and feels good.

Many of you are under the impression that the old adage, "Once a sinus, always a sinus," is still true, but I beg to differ with you, for the skilled rhinologist is permanently curing many cases and ameliorating the symptoms of many others.

DR. CHARLES D. BLASSINGAME (Memphis): Dr. Orr has presented to us an excellent paper on a most important subject. Sinusitis is a disease as far-reaching in its consequences as any disease with which the medical man has to deal. Dr. Orr has told you that it is both primary and secondary. As a primary disease, it manifests itself by local nasal symptoms either acute or chronic, and as such may act as a focus of infection from which may develop such remote diseases as bronchitis, nephritis, endocarditis, mastoiditis, meningitis, and numerous morbid processes which may result in incapacition, invalidism, or death. When, however, sinusitis is a secondary disease, as Dr. Orr says, coming on insidiously, without any local nasal symptoms and is found only in the course of a routine examination, it is to be regarded as a grave danger signal, warning us that the integrity of the body tissues is threatened and that there is already a break in the first line of defense against disease. Disintegration has already set in. This condition is chronic, and there is a low grade of infection which becomes a menace to the health of the individual. Here we have a disease with two distinct aspects—one, a local nasal disease from which develop constitutional phenomena; the other, a constitutional weakness manifesting itself locally as sinus disease. In either case a disease of the sinuses becomes at once a matter of major importance. A primary sinus infection should be treated rationally. In the first place, the patient should be confined to bed until convalescence is established. It is in the latter stages of an acute sinus infection that complications are apt to arise. In a recent case an acute attack of purulent sinusitis, which had lasted three weeks, had begun to convalesce when a middle ear and mastoid infection supervened. In another recent convalescing case the sinus infection was complicated by an attack of endocarditis, which has now caused several months of invalidism. In still another case meningitis and death supervened following an attack of sinusitis. A sinus infection that has a delayed convalescence should be investigated for an empyema of the sinuses, and, if found, dealt with in a manner adequate to the demands of the case. It is demanded of otolaryngologists that when sinus infection assumes serious aspects, measures be adopted sufficient to cope with the disease. It may mean only nasal shrinkage. On the other hand, it may mean lavage, or in extreme cases surgical drainage.

In those cases of chronic sinus disease with marked pathology in the nasal tissues where local and constitutional manifestations indicate an advancing process upon the health of the individual, we do not know of any department of medicine in which is required a broader conception of the significance of pathological processes and the therapeutic measures necessary for their correction.

Sinuology is a field separate and apart from the so-called nose and throat specialty where the practice is limited to either spraying noses or scraping out sinuses. It is a field where types of pathology are recognized and where there is surgical judgment linked with surgical conscience. In this field only will standardized methods of diagnosis and treatment of sinusitis be established.

DR. JOHN SHEA (Memphis): I enjoyed Dr. Orr's paper very much. Today our modern physiologist's conception of health is that each day we have a successful illness. Life is carried on by one series of immunization against the infections of our environment. In the infant this autoimmunization is principally the function of the adenoid. As the child develops, the tonsil takes on this function next, and after puberty it is the idea that the sinus takes on the function and enters greatly into the immunization against infections of the upper respiratory tract.

The nose is the organ of the sense of smell and is the ostium of the respiratory tract. The sinuses are the reserve air chambers to lighten the cranium and supply information as to the state of equilibrium, but certainly the great Creator did not put so much tissue in our heads without further use of it, and personally it is my conviction that the sinuses are most important auto-immunizers against upper respiratory tract infection. There is no great quantity of glands in the mucous membrane lining the sinuses, so this contention for a long time was doubted until recently it has been proven that it is the fixed phagocytes or the histocytes that line the mucous membrane of the sinuses that carry on this important function.

Any one who has a healthy set of sinuses never needs a cold serum. When we contract a cold, the first stages of it are a protective measure. Our resistance is putting up a fight against the invasion of an organism. All internal medications that we can give a patient to help him against a cold are merely aids brought to change the biochemistry of that patient to make it unhealthy for the further growth of germs. During this early stage the sinus does a great deal, and you can watch its type of secretions to tell how the fight is going along. As long as the patient's resistance is greater than that of the invading infection, the cold is a protective measure; but as soon as his resistance becomes bankrupt, then we have the presence of pus within the sinuses, which to me indicates that the patient has lost his fight, at least temporarily, against the infection and needs help.

How can you help him? You may help the sinus patient by surgery, by immunization, by climate, and by diet. In the acute conditions, surgery is never indicated in the face of temperature of any sinus case. Lavage through the natural opening may be instituted at any time if it is done without trauma to the sinus, but never any surgery in the face of temperature in the acute sinus. In the chronic patient, surgery is necessary to remove from him inadequate drainage, inadequate ventilation, and any dangerous material the absoption of which will influence his body as a whole.

Immunization is the best means that we have of fighting an acute sinus disease. Of course, climate we all know is a factor. If a man gets an acute sinus in Chicago and comes to Memphis, he is better. If we get one here and go down to the coast or to Florida, we are better. Sinus disease is primarily a disease of the winter months unless we foolishly do something in the summer time to cause it, such as diving too much.

Diet plays an important part in the sinuses of many patients. I am not speaking at all of the allergies. We have many patients who, if they eat certain foods, do not get up an allergy, but an acute sinus disease. I have plenty of patients in my practice, especially among the younger children, in whom an excess of sugar will precipitate an acute sinus with adenoids or an acute sinus complicated by a middle ear. That isn't allergy; they get an acute sinus disease from the taking of certain foods.

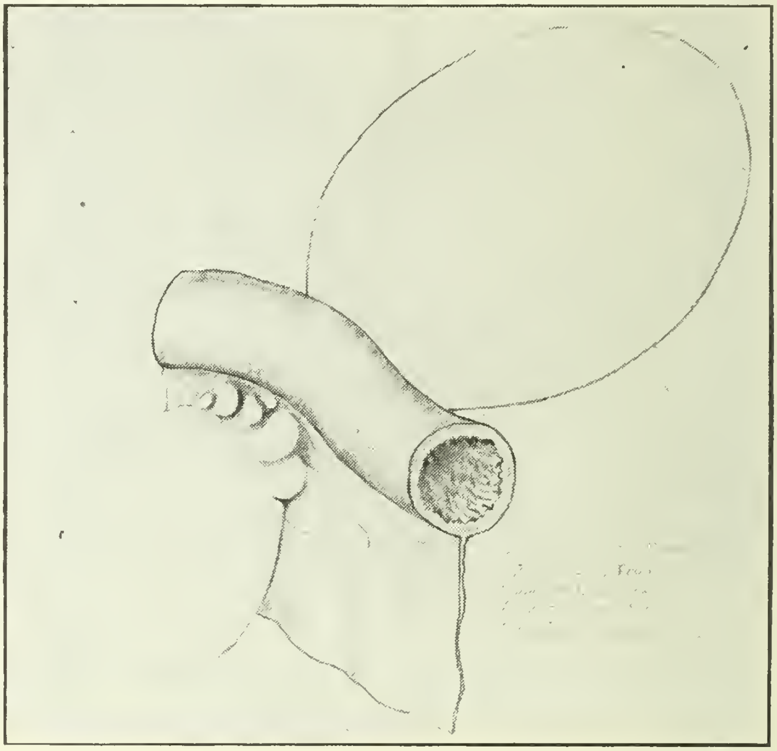
Under immunization we have the vaccines, the filtrates, the non-specific proteins, and by mouth the vitamins. In vaccines for the acute patient, small doses of the stock vaccines often work very satisfactorily. The best vaccine, of course, in the subacute and chronic case is an autogenous vaccine that has been seasoned. By that I mean that we keep the cultures of the acute throats, the acute mastoids, the acute sinuses as they come into the laboratory to isolate the germ that is causing the infection that is going the rounds at that time, and we add to it whatever culture we may be able to obtain from the patient's own sinus. In that way we give him an untogenous vaccine that has been seasoned with the infection of the environment at that time.

INTESTINAL OBSTRUCTION, WITH REPORT OF AN UNUSUAL CASE*

J. P. Baird, M.D., Dyersburg

TWO reasons prompt me to choose Intestinal Obstruction as a subject for discussion—first, the hope that by insisting on greater promptness in diagnosis and immediate operation we may lower the exceedingly high mortality in this very common and dangerous condition; and, second, to report a case I operated upon recently, the cause of which was very interesting and quite rare.

The subject of intestinal obstruction is not new and has been discussed very frequently, but it is one which will need constant consideration and alertness on the part of the profession if we succeed in lowering the mortality rate to a more reasonable percentage. I hope to impress this point rather than attempt a complete discussion of this vast subject, which is impossible in our limited time.



Briefly, we understand obstruction, or ileus, to be pactically a complete closure of the lumen of the bowel, making impossible the passage of intestinal contents, either gas or fæces. Naturally any portion devitalized by cutting off the blood supply sooner or later produces obstruction. The various causes for this, one of the most fatal of all acute abdominal conditions, are chiefly mechanical, and our short list of cases referred to later are of this variety. Paralytic ileus and dynamic ileus, while recognized as causes, will not be discussed.

Chief among the mechanical causes of obstruction are post-operative and old inflammatory adhesions, comprising about 38% of our series; strangulated hernias, true or concealed, about 22% in the same series; and tumors, both benign and malignant, causing 16%. Other causes may be due to volvulus, intussusception, diverticula, foreign bodies, fæcal impaction and stricture, either ulcerative or post-operative. Malignant tumors may be primarily of the intestine or involving it secondarily by extension from adjacent organs—namely, prostate, bladder and uterus. Benign tumors, chiefly of extra-intestinal origin, comprise about 8% of this series. One of the latter variety, infrequently encountered, which may cause obstruction, are mesenteric cysts, and the account of such a case occurring in our series is the basis of a rather detailed report.

As I had never found previously a tumor of such variety and the records of the Baird-

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*Read before the Tennessee State Medical Association, Memphis, April 12, 13, 14, 1932.

Brewer General Hospital revealed this to be the only one in appoximately 2,500 laparotomies, I was interested in investigating the records of other and larger institutions. Bartlett (1) in 1923 stated that about 200 cases have been reported, with 2 in a series of 1,572 laparotomies in the University of California Hospital. Powers' (2) analysis of 179 cases of intestinal obstruction does not list mesenteric cysts as the cause in a

ANALYSIS OF FIFTY CASES OF INTESTINAL OBSTRUCTION, LISTING CAUSES, DAYS' DURATION BEFORE ENTRANCE, AND UNCORRECTED MORTALITY RATE

CASE No.	CAUSE	DAYS DURATION BEFORE ENTRANCE	OPERATION	DIED	LIVED
7670	Strangulated Inguinal Hernia	3	Herniotomy. Intestine freed		***
8375	Tuberculous Peritonitis	Partial I Mo.	Adhesion freed. Piece of mesentery removed		***
9016	Strangulated Inguinal Hernia	1	Herniotomy. Ileum released		***
9143	Diverticulum	3	Diverticulum resected	1 Day	
9003	Ovarian Cyst	3	Oophorectomy. Adhesion freed from intestine	1 Day	
8498	Strangulated Inguinal Hernia	1	Herniotomy. Release of omentum		***
1369	Post-operative Adhesions	5	Adhesions freed. Bowel necrotic	1 Day	
1375	Multiple Mesenteric Cysts	4	Cystic area removed from mesentery		***
1326	Strang. Ing. Hernia containing Intestinal diverticulum	2	Herniotomy. Diverticulum released from sac and resected		***
4402	Post-operative Adhesions	2	Adhesions freed	1 Day	
5014	Inflammatory adhesions, pelvis. (Old)	2	Adhesions freed		***
1221	Carcinoma of Appendix and Cecum	6	Resection 3 in. Ileum and Caput Coli	4 Days	
5940	Inflam. adhesion causing strangulated loop of Ileum	1	Appendectomy. Adhesions freed		***
4311	Inflam. adhesions Ascending Colon	7	Adhesions freed, Colon untwisted		***
4347	Post-operative adhesions, pelvis	3	Adhesion freed between Ileum and Ovary stump		***
6039	Post-operative adhesions, chronic	7	Adhesions dense, 16 in. of Ileum resected		***
5719	Meckel's Diverticulum	2	Diverticulum resected		***
5516	Adhesions of Sigmoid Colon	2	Resection of Sigmoid	1 Day	
4395	Inflam. adhesions, pelvis. (Old)	2	Adhesions freed		***
5388	Strang. Inguinal Hernia	2	Herniotomy. Laparotomy and Ileostomy	2 Days	
5366	Post-operative adhesions, Ileum	1	Adhesions freed		***
7343	Volvulus. (Undeter.)	2	Laparotomy. Volvulus released		***
5615	Inflam. adhesions. (Old)	10	Adhesion freed. Portion of Mesentery resected		***
5708	Traumatic Volvulus	2	Laparotomy. Volvulus resleaed		***
6051	Carcinoma, Sigmoid	5	Colostomy	2 Days	
8228	Carcinoma of Sigmoid Colon	5	Colostomy	3 Hrs.	
8106	Ovarian Cyst	2	Oophorectomy		***
8172	Traumatic Adhesion of Colon	2	Adhesion freed	4 Days	
216	Acute appendix with Volvulus	2	Appendectomy Volvulus freed		***
55	Strangulated Inguinal Hernia	7	None	1 Hr.	
22	Ovraian Cyst causing Volvulus	2	Oophorectomy		***
364	Post-operative Adhesions (Old)	5	Adhesions freed	3 Days	
505	Post-operative Adhesions (Old)	3	Adhesions freed Enterostomy	5 Days	
519	Enterolith of Cecum-Appendix	6	Resection of Caput Coli and Appendix		***
817	Post-operative Adhesions (Old)	3	Resection of 6 in. gangrenous Ileum	9 Days	
599	Strangulated Umbilical Hernia	4	Hernia reduced. Resection of Ileum		***
1120	Inflammatory adhesion between bladder and Ileum	3	Adhesion freed itself as peritoneum was opened under Spinal Anaes.		***
1345	Strangulated Inguinal Hernia	7	Herniotomy. Bowel gangrenous and ruptured	10 Hrs.	
8532	Volvulus	4	Volvulus released	1 Day	
8526	Undetermined	2	Relieved by Compound Enemata		***
9261	Post-operative Adhesions. (Old)	2	Adhesions freed		***
8291	Strangulated Inguinal Hernia	4 Hr.	Ileum released. Herniotomy		***
8953	Adhesion band over Ileum	4	Adhesion released. Ileum aspirated	12 Hrs.	

Case No.	Cause	Days Duration Before Entrance	Operation	Died	Lived
9889	Carcinoma of Sigmoid Colon	4	Resection and anastomosis	25 Days	
8968	Diverticulum of Ileum	5	Diverticulum removed		***
9363	Hematoma of Ascending Mesocolon	1	Hematoma removed		***
7714	Strangulated Femoral Hernia	5	Herniotomy. Ileum released.		***
7729	Adhesions. Colon	14	Adhesions freed	2 Hrs.	
7725	Post-operative Adhesions. (Old)	5	Adhesions freed. Jejunum resected		***
7647	Strangulated Inguinal Hernia	4	Herniotomy. Intestine released	2 Days	
Total No. of Cases 50.	Adhesions 38%. Strangulated and other Hernias 22%. Malignant Tumors 8%. Benign Tumors 8%. Volvulus 8%. Diverticulum 6%. Enterolith 2%. Hematoma 2%. Tuberculus peritonitis 2%. Traumatic volvulus 2%.	Average number of days before entrance 4.		20	30
				Total Mortality of series 40%. Cases entering 3rd day and earlier Mortality Rate 28.5%. Cases entering 4th day and later Mortality Rate 54.5%.	

single instance. In the larger series of 3,064 cases of intestinal obstruction reported by Souttar (3) from seven London hospitals, mesenteric cysts were not encountered. These figures are significant in that about 35% of such cysts have symp-

Reported By	Date	No. of Cases	Type—Contents—Histology	Location
5 Lemichez	1896	1	Dermoid-Suppurative Contents	Mesentery—Small Intestine.
6 Fossard & Lecene	1900	1	Hemorrhagic Cyst	Transverse Mesocolon.
7 Spalding, A. E.	1905	1	Tuberculous Cyst	Mesentery—Small Intestine.
8 Niosi, F.	1907	1	Cystedenoma-Hemorrhagic Contents	Transverse Mesocolon.
9 Bauer, A.	1910	2	Entero-Cystomata Serous Contents	Mesentery—Small Intestine
10 Forester, E.	1921	1	Lymphangioma (Cystic)	Base of Mesentery and Transverse Colon.
		1	Dermoid	Base of Mesentery Jejunum.
11 Carter, R. M.	1921	1	Serous Cyst	Mesentery of Ileum adjacent to Caput Coli.
12 Chauvin, E.	1923	1	Hemorrhagic Cyst (Probable Encysted Hematoma)	Transverse Mesocolon.
13 Rawls, J. L.	1923	1	Lymphangioma-Chylous and Hemorrhagic Contents	Mesentery of Terminal Ileum.
		1	Fibroma—Degenerating, Cavity containing food, blood etc.	Mesentery of Terminal Ileum.
1 Bartlett	1923	1	Lymphatic Cyst Blackish and Serious Contents	Retro-peritoneal. Right Mesocolon and Cecum.
		1	Cystic Hemanginoma Hemorrhagic Contents.	Mesentery of Terminal Ileum.
14 Schaaf, A. and Stultz, R.	1923	1	Dermoid	Transverse Mesocolon.
4 Higgins and Loyd	1924	1	Unilocular. Blood and Cholesterin. Wall fibrous, endothelial lining	Retro-peritoneal. Ileo-cecal region. Small cysts Ileo-cecal mesentery.
		1	Inflammatory. No renal tissue in wall	Retro-peritoneal (peri-renal).
15 Polcinego, Piero	1926	1	Not Classified—small Cyst filled with Serum	Ascending Mesocolon.
		1	Hemorrhagic Cyst	Gastro-colic Omentum.
16 Fumagalli	1927	1	Lymphangioma—Containing Chylous and Hemorrhagic Material	Mesentery of Terminal Ileum.
17 Green, John A.	1927	1	Enteric cyst. Multilocular. Serous contents. Enteric derivation	Mesentery Transverse Colon.
		1 1	Enteric cyst. Unilocular. Mucoid contents. Enteric derivation	Mesentery of terminal Ileum and retro-peritoneal.
18 Jackson, A. S. and Ewell, G. H.	1929	1	Multilocular—Containing Mixed Gelatinous substance Chylous and Hemorrhagic	Mesentery of Terminal Ileum.
19 Shands, H. R.	1916	1	Chylous Cyst	Mesentery of Small Intestine.
		1	Chylous Cyst	Mesentery of Jejunum.
Author's Case	1932	1	Serous Cysts—Unilocular Duplicated on Opposite Leaves of Mesentery	Mesentery of Terminal Ileum.

toms referable to complete or partial obstruction. According to Higgins and Lloyd (4), mesenteric cysts were first reported in the sixteenth century by Benevini, a Florentine anatomist, and that about 250 cases have been reported in the literature since that time.

A charted record from the available literature of the past thirty years, comprising 26 cases, shows the small number reported by surgeons of wide experience and reveals the infrequency of these cysts.

A survey of this analysis shows that they occur in the mesentery of the small intestine in about 56% of the cases, usually in the mesentery of the terminal ileum, and in the folds of the transverse mesocolon in about 23% of the cases. The most common type is the lymphatic cyst with serous or chylous contents. The symptomatology was referable to obstruction of the intestine in 35% of the cases, with sharp, persistent abdominal pain, probably from rapid distension from hemorrhage, in about 38%. The presence of the tumor itself, practically symptomatic except for size, was cause for operative intervention in about 20% of cases.

The etiology of mesenteric cysts is obscure, and there seems to be no uniformity in classification. It is generally believed that true cysts of the mesentery are derived from three sources: (1) Embryonic remnants incarcerated behind the peritoneum which migrate forward between the leaves of the mesentery (Higgins and Lloyd 4, Forster 10, Carter 11, Niosi 8, Bartlett 1); (2) intestinal origin, arising from intestinal diverticulum or sequestration and from persistent portions of the omphalo-mesenteric duct (Fumagalli 16, Bauer 9, Carter 1, Niosi 8); (3) lymphatic origin, arising from lymphangiomata or from the primitive lymphatic cistern or sac located in the abdomen (Bartlett 1, Forster 10, Fumagalli 16). Attention has been called to the difference between retro-peritoneal and true mesenteric cysts by Shands 19, Green 17, and Fumagalli 16. To the list of embryocystomata, enterocystomata, and lymphiangiomata there should be added dermoids (Schaff and Stulz 14, Lemichez 5), hydatid cysts, and cystoid tumors caused by softening of tissue, such as tuberculous ceseation (Spalding 7) or central necrosis of malignancy or fibroma (Rawls 13).

My own case—No. 1375—entered hospital February 29, 1932, complaining of pain in abdomen and vomiting. Family history revealed that a brother and sister died from intestinal obstruction. The patient enjoyed good health until onset of present illness. Both parents stated that neither had previously noticed tumefaction or symptoms. Four days before hospitalization patient had a sudden onset with severe abdominal cramping, which seemed to be confined to upper abdomen unaccompanied by fever or rigor. The severity of cramping lessened in about four hours, but a generalized abdominal tenderness persisted. At this time the mother gave a dose of castor oil, which she vomited without delay. The following morning the mother gave epsom salts, which was retained, but did not produce purgation. On the third day abdominal tenderness seemed to localize in the lower right quadrant of abdomen and flank. She began an intermittent vomiting, which continued until a physician was called on the fourth day, who discovered a tumor mass in the lower right quadrant and promptly advised hospitalization. The bowels had not moved since the onset.

Physical Examination: The examination reveals a negro girl, aged 10, complaining of abdominal pain and vomiting. Appearance of patient showed anxious facial expression, distended abdomen, right thigh typically flexed, rapid respiration, and a moderate degree of shock present. Pulse, 130; temperature, 98.6; blood pressure, 100 systolic and 76 diastolic. Visible peristaltic waves were present and a bulging in abdominal contour over right rectus muscle. Palpation revealed general tenderness over right side, the maximum point of tenderness being near McBurney's point. A large, tender tumor mass could be palpated plainly in this region and percussion showed dullness over an area approximately 6x8 inches in diameter. The tumor seemed smooth, fixed in position, apparently unattached to the abdominal wall and not of the consistency of a solid tumor. Auscultation revealed intensified borborygmus and fluid rush over the left side of the abdomen.

Laboratory Examination: Urinalysis negative. Total leukocyte count, 7,400. Differential—79 neutrophiles, 6 large mononuclears, 15 lymphocytes.

In regard to diagnosis in this particular case, appendiceal abscess with a thick, dense wall of surrounding adhesions was considered, but most of the evidence seemed to favor some variety of tumor, possibly sarcoma, producing obstructive symptoms.

Immediate operation was done, showing much distension of small intestine, the loop occupying the lower right quadrant markedly congested, distended, bluish, with dark spots bordering on gangrene. Considerable blood-tinged serum was exuding in the abdominal cavity. A large cyst, oval in shape, appeared in the incision, with a pedicle extending toward the right ovarian region. The cyst was smooth, thin-walled and whitish in color, 7½x4½ inches. It had the exact appearance of a large ovarian cyst, and before delivering the tumor or locating the pedicle I instructed a circulating nurse to ask other members of the staff to the operating room to see such a cyst in a ten-year-old girl. On delivering the cyst, I was surprised to find the pedicle attached by a fairly broad base to the mesentery of the ileum about 18 inches from the illeo-cæcal junction. On the opposite side of the mesentery another cyst the size of a large orange was found arising from the same base which connected through the leaf of the mesentery. Four or five smaller cysts, ½ to 1 inch in diameter, were found at the base or origin of the larger tumors (see diagram). The cyctic base or area was about 2 inches in diameter and extended nearly to the mesenteric border of the ileum. The obstruction was caused by a loop of ileum, proximal to the large cyst, becoming twisted around the tumor, the resultant pressure completely occluding its lumen and producing some degree of strangulation. Resection was considered, but thought unnecessary. No trouble was encountered in excising the cyst-bearing area in the mesentery, which was done without endangering the blood supply to the proximal portion of the ileum. The opening in mesentery was carefully sutured and drainage tube inserted for escape of bloody serum, and abdominal wound closed.

An unfavorable prognosis was followed by a rapid and uneventful recovery. Immediate and frequent doses of mineral oil, numerous enemata and gastric lavage, gradual removal of the draininge tube, and a few dressings was followed by a very rapid recovery. Patient left hospital on the seventh day and was reëxamined at the end of two weeks, when patient seemed perfectly well and was on full diet, with bowel function perfect.

Gross examination of these cysts showed the larger to measure about 7½x4½ inches in diameter and the smaller one 4x2½ inches. They were not attached to the intestine, were oval in shape, pedunculated, very thin-walled, and contained an almost clear, slightly yellowish-tinged fluid. Diagnosis was apparently benign cysts, unilocular in character, arising from the mesentery. The contents of the cysts were serous. Microscopic examination was not made.

Hoping my lengthy diversion from the subject of obstruction will be pardoned, and, to return for a short discussion of same, will state that the previously mentioned types of intestinal obstruction suggest to a degree the pathology present, though time will not permit a consideration of pathological changes in detail. One or two points should be mentioned, however, before symptoms are discussed—that is, the location of the obstruction, whether high or low in the intestinal canal, and the amount of vascular disturbance which may produce gangrene and its resultant toxemia. Obstruction occurring in the upper portion of the intestinal canal produces a more rapidly progressing fatal tendency, which is added to by superimposed gangrene. This latter naturally causes graver pathology than mere obstruction of bowel contents alone. These two conditions may interfere to an extent with the general rule that the increase in time following complete obstruction rapidly increases the mortality. Naturally, these conditions greatly influence the rate of progress toward a fatal ending in the untreated cases. The onset is frequently treacherous in that classical symptoms are frequently absent for many hours after dangerous pathology is present. In a few cases I have seen a gangrenous portion of bowel followed by a fatal result, even when thought to have been operated early, just at the beginning of temperature and pulse elevation, and with very few accompanying symptoms to indicate an advanced or dangerous pathological finding. It has been my observation that in no other condition responsible for the production of the acute abdomen are we so likely to make a fatal mistake by underestimating a group of apparently mild symptoms while death of the intestine is actually progressing rapidly. This possibly may be explained by the fact that occasionally the strangulation of the blood supply produces gangrene of a portion of intestine hours before gangrene toxins and toxic intestinal contents are absorbed and shown by systemic symptoms.

Unfortunately the usual list of classical symptoms is partially absent, such as pain, intermittent or constant; nausea, vomiting, inability to defecate or to obtain satisfactory results from enemata.

Other symptoms not always constant are abdominal distension and tenderness, usually localizing near point of obstruction. Occasionally peristaltic waves accompanyings pains can be visualized. Also tenesmus with small stools principally composed of blood-tinged mucus are evacuated from below the point of obstruction. This latter symptom may encourage our period of watchful waiting before operating, and is sometimes misleading. Later systemic symptoms follow—i.e., toxæmia, rapid, feeble pulse, elevation of temperature, and increased leucocytosis if peritonitis appears.

The treatment and mortality rate depend on several factors—first, the time of operative procedure; second, the nature of obstruction; and, third, the position of obstruction, whether situated high or low in the intestinal tract. In regard to the first, I consider by far the most important the ability to convince quickly the patient, family, and friends of the need of an immediate operation. As this is frequently the most difficult part of the treatment, the family physician consequently occupies an advantageous and responsible position. He can be the most influential element in decreasing the unnecessarily high mortality if he is in a position to convince his patient to make an intelligent decision early. Again I say, this is the most important part of the treatment, as any surgeon of ordinary, or at least average, ability should save at least 75% of these cases if able to open the abdomen within 36 or even 48 hours of onset of obstructive symptoms. A series of the last 50 cases of obstruction in the Baird-Brewer hospital shows the average time before entrance to be 3 and 4/5 days—practically 4 days—ranging from a few hours to more than a week from onset of plain symptoms to time of entrance. Our mortality rate shows 40%, which is probably an average mortality rate, but entirely too high. Possibly with improved surgical technique, good judgment, and mechanical dexterity, this rate could be lowered slightly, but not materially until the average entrance time is decreased appreciably. This series also shows a 28.5% mortality for the first 3 days, and a 54.5% mortality rate for those entering on the fourth day and upward. These figures show a progressively higher mortality each day and mathematically demonstrate the seriousness of loss of time. But procrastination cannot be charged entirely to the family, the patient, or the attending physician, who fears responsibility for insisting on immediate operation. We may further waste valuable time in the hospital by too many laboratory tests, a period of further observation, and a too lengthy preparation for operation, during which time the patient may lose more than such preparation can replace. We are not contending for hasty operation without proper examination, but in the acute abdomen the examinatian can be carefully done quickly. Frequently, when we are perfectly satisfied of the existence of a real acute abdomen, it is wiser to open it and make the diagnosis while we are relieving and making the patient safe. I believe Dr. John B. Murphy's statement, that when pus is found during operation for appendicitis, that either the patient or doctor is responsible for its presence; and it is also probably true that when a portion of gangrenous gut is found we may safely draw the same conclusion.

The second consideration in treatment or relief of the obstruction need not be discussed in detail, as all surgeons with average experience are able to deal with any form of obstruction as the particular variety appears. His judgment and experience will be used to meet each immediate case, and very rarely we find two cases exactly alike. The indication is to relieve the obstruction, preserve the viability of all parts of the intestinal canal; and, third, to adopt suitable systemic treatment which will promote dilution and elimination of toxins and combat dehydration and replace reduced chlorides. The toxic symptoms are usually much more pronounced as the obstructed point nears the upper part of the intestinal canal, and these cases cannot be treated by mechanical relief alone, but will need increased fluids and chlorides supplied to the limit to save the patient.

The post-operative treatment is largely dependent upon the toxæmia, the fluid loss and the decreased blood chlorides. Anderson and Rockwood (20) state that there is experimental evidence that a fall in blood chlorides usually parallels the toxæmia, and their figures show that in cases where blood chloride was below 260 mgm. in the untreated cases, the mortality was 52%, whereas the cases where chlorides were supplied the mortality was only 22%. Fluid is replaced by infusions, hypodermoclysis or proctoclysis. Within the past five years there has been a general trend to employ hypertonic saline solutions recommended by many surgeons (Denis 21, Miller 22, Dogliotti and Mairano 23, Anderson and Rockwood 20, Orr and Haden 24, Lewis 25, Mendonca 26), to build up rapidly the blood chlorides. Orr and Haden employ 500 c.c. of 5% Saline Solution pre-operatively, followed by 1 to 2 litres of 2% solution by hypodermoclysis after operation. Some employ 10% (Dogliotti and Mairano 23), and 20% solutions in dosage of 20 c.c every 2 hours (Denis 21), and as much as 30 to 40 grams of sodium chloride are given in first 24 hours. My own experience with hypertonic solutions—that is, 10 to 20%—has been so limited that I do not feel that an opinion is warranted. The routine infusions have been solutions of 1% saline with 5 to 10% glucose, and I have never employed more than a 3% saline solution intravenously, although the use of the more concentrated saline solutions may be a factor in carrying the late case with marked toxæmia through to a successful termination.

In an effort to initiate peristaltic movements as soon as possible after operation, the administration of mineral oil—ounces two—every 2 hours is almost routine, combined with strychnine—grs. 1/30—hypodermically. Frequent enemata with or without the use of Pituitrin are started early to rid the intestinal tract of toxic contents. These measures are efficacious in the great majority of cases, although it has been previously stated that where dilatation of intestine is of sufficient degree or duration its paralytic condition will yield to none of these measures and death is the inevitable result.

The anæsthetic employed should be adjusted to the type best suited in the individual case, whether local, general narcrosis, or spinal analgesia is employed. In the larger percentage of cases, where there is no definite contraindication, I prefer the spinal analgesia, as it gives a degree of relaxation not obtainable in the majority of general anæsthetics. Indeed, the spinal analgesia, or sub-dural block, has been suggested (27) as a criterion for operative intervention. If, within 10 to 15 minutes after the injection, the passage of gas and feces has failed to relieve the distention, we then know that we are dealing with a mechanical obstruction. The necessary operation may then be performed immediately, thus taking advantage of the anæsthetic already produced. In making prognosis, would suggest a carefully guarded one in all cases especially after the third day.

SUMMARY AND CONCLUSIONS

(1) Mesenteric Cysts, though quite rare, cause symptoms of partial or complete obstruction in about 35% of the cases where they are found.

(2) In the twenty-six cases analyzed, the claim to correct pre-operative diagnosis was made in only one instance.

(3) They should be included in the differential diagnosis when a smooth, movable tumor, which does not have a firm consistency, is encountered in abdominal examination.

(4) The mortality in intestinal obstruction remains too high.

(5) It can be lowered appreciably by early recognition and immediate operation.

BIBLIOGRAPHY

1. Bartlatt, E. I.—Mesenteric Cysts. Surg. Clin. N. Am. 3:811-821 (June), 1923.

2. Powers, J. H.—Acute Intestinal Obstruction Due to Impacted Gall Stones. Surg. Gyn. and Obst., Vol. XLVII, No. 3, p. 416-421, September, 1928.

3. Souttar, H. S.—Quoted from Burgess. The Lancet No. 1:857-859 (April 27, 1929).

4. Higgins and Lloyd.—British Journal of Surgery, Vol. 12, 1924-1925.

5. Lemichez—Suppurative Dermoid Cyst of the Mesentery with Intestinal Adhesions. Jour. d. Sc. Med. de Lille, 1:342-344 (April 4, 1896).

6. Fassard and Licene—Hematic Cyst of the Transverse Mesocolon. Bull. et mem. Sac. de Anat. de Paris, 75:1976-1978 (Dec., 1900).

7. Spalding, A. E. — Tubercular Cyst of the Mesentery. Northwestern Lancet, No. 25:415 (Nov. 1), 1905.

8. Niosi, F.—Mesenteric Cysts of Embryonal Origin. Virchow's Arch., 190:217-338, 1957.

9. Bauer, A.—Mesenterial and Retro-Peritoneal Cysts. Brun's Beit. Z. Klin. Chir., 70:829-855, 1910.

10. Forster, E.—Concerning Genuine Mesenteric Cysts. Baits. Z. Klin. Chir., 124:116, 1921.

11. Carter, R. M.—Cysts of the Mesentery. Surg. Gynec. and Obst., 33:544, 1921.

12. Chauvin, E.—Hematic Cyst of the Transverse Meso-Colon in a girl 15 years old. Arch. franco-belges de chir., Brux. 26:793-796 (August), 1923.

13. Rawls, J. L.—Mesenteric Tumors. Virginia Medical Monthly, 50:764-766 (February), 1923-24.

14. Schaaf, A., and Stulz, R.—Dermoid Cyst of the Transverse Meso-Colon. Bull. et mem. Soc. Anat. de par., 93:720-721 (Nov.), 1923.

15. Polcinego, P.—Two Cases of Polycystic Tumor of the Mesentery. Il Policlinico, (Proc. Sect.), 33: 937-939 (July 5), 1926.

16. Fumagalli, C. R.—Mesenteric Cysts. L' Aspedal Maggiore, 15:473-480 (December 31), 1927.

17. Green, J. A. — Entero-Mesenteric Cysts. Surg. Gynec. and Obst., Vol. XLIV, No. 3, p. 401-404, March, 1927.

18. Jackson, A. S., and Ewell, G. H.—Chylous Cysts of the Mesentery. The Wisconsin Medical Journal, 28:364-365 (August), 1929.

19. Shands, H. R.—Retro-Peritoneal Cysts. The Sou. Med. Jour., Vol. XXIV, No. 6, p. 541-543 (June), 1931.

20. Anderson, R. S., and Rockwood, Reed—The Influence of Treatment with Hypertonic Sodium Chloride Solutions in Patients with Acute Abdominal Lesions. Surg. Gyn. and Obst., Vol. XLIX, No. 1, p. 48-54, July, 1929.

21. Denis, R.—Indication, Made of Active, and Dosage of Injections of Hypertonic Solutions of Sodium Chloride in Intestinal Occlusion. La Presse Medicale, 38:203-205, Feb., 1930.

22. Miller, C. J.—A Clinical Consideration of Intestinal Obstruction. Amer. Jour. Surg. 8:509-516, March, 1930.

23. Dogliotti, Mario, and Mairano, M.—Three Years' Experience with Salt Therapy in Intestinal Occlusion. La Presse Medicale, 38:880, July, 1930.

24. Orr, Thomas G., and Haden, Russel L.—Treatment of Intestinal Obstruction. Annals of Surg., 89:354-358, March, 1929.

25. Lewis, Dean—Intestinal Obstruction. Wisconsin Med. Jour., 28: 195-199 (May), 1929.

26. Mendonca, Jose—Surg. Gyn. and Obst., Vol. LII, No. 6, p. 1115-1121, June, 1931.

27. Bartlett, Jr., Williard—An Indication for Early Operation in Intestinal Obstruction. Surg. Gyn. and Obst., Vol. XLIX, No. 5, p. 719, Nov., 1929.

DISCUSSION

DR. W. P. WATSON (Dyersburg): These cases of intestinal obstruction are always very interesting. We all run across cases of obstruction from various causes. There are so many causes of it that the doctor has always got to be on the watch for it; it slips up on him many times when it is not expected.

I was very much interested in Dr. Baird's paper. The case he told about is quite an interesting one, and we have had some other cases there that were quite interesting. I remember one case at the same hospital—Dr. Baird's hospital—that was an ovarian cyst with a long pedicle. This obstruction came on just a few days after labor. The labor was rather a hard labor in a young woman, and about two days after the labor her abdomen became bloated; she suffered pain in the abdomen, and was unable to get a bowel movement. By using enemas we still got no results. The patient was vomiting and suffering a good deal. We took her to the hospital, operated on her, and found this ovarian cyst with a long pedicle twisted on itself, and that was causing the obstruction.

Another case was that of a colored man who was taken ill very suddenly while at work. He had cramping in the abdomen, and considerable shock; there was some vomiting. We had no results with enemas, and on operating we found a very large stone that had ruptured through the gall bladder and had been turned loose in the abdomen. This gall stone was as large as a good-sized walnut.

As I say, we run across obstructions from so many different causes that if we are not on the lookout for them it may be too late to be of benefit to the patient with an operation.

DR. J. P. BAIRD (Dyersburg): I want to thank Dr. Watson for discussing the paper, and to make just one more comment. I consider the recovery of this rather unusual case very satisfactory indeed, which probably emphasizes an observation I have frequently made on the surgical risk of a colored patient—that is, they are frequently above par in resistance following major operations. In closing, may I again express the hope that the preoperative period in intestinal obstruction, as in other acute abdominal conditions, may be greatly shortened, thereby placing the mortality rate where it should be normally.

FIVE HUNDRED APPENDIX CASES*

R. A. BARR, M.D., Nashville

THIS report covers five hundred consecutive cases with final diagnosis of appendicitis and without other recognized pathology. It includes all appendix cases admitted during the period covered and all had operation done. No other surgery was done besides removal of the appendix. No incidentally removed appendices are included.

The value of statistical reports by individuals is questionable for few of us would report a series of cases unless we felt that the result obtained would to some extent redound to our credit. Because my method of handling cases varies in some details from the routine followed more or less generally by Southern surgeons it may be helpful to me, if not to others, to see how matters look in retrospect. Five hundred cases are too few to be very instructive, but these are strung out over quite a period of time, and do not represent a short period of coincidences as might happen with a surgeon doing a big work.

All of these cases were operated on as soon as diagnosis was made, as are all appendix cases that come into my care unless the patient is so far gone that death seems immediately imminent. Nitrous Oxide and Oxygen induction followed by closed Ether was the usual method of anesthesia. Local (never spinal or para-vertebral) anesthesia has been used in a few cases usually because of pulmonary, or rather bronchial complications, but occasionally because of the seriousness of the patient's condition and more occasionally still because the patient preferred it. Cocaine 1 5 and 1 10 of 1 per cent was used for local anesthesia and the least possible infiltration of the tissues was made. I depend on the drug, not on infiltration pressure. No purgative is ever given by me in the preoperative or postoperative handling of any abdominal case. After losing four cases (three appendectomies and one trachelorrhaphy) who either died, or went seriously and suddenly bad within an hour from the giving of the old Magnesium Sulphate and Glycerine enema, I stopped using any enema stronger than soap suds and usually stick to plain water. Two of these cases (one appendicitis) had hyoscine and I no longer use that drug.

With seriously sick abdominal cases I give plain tap water proctoclysis, one pint every three or four hours, and make no effort to move the bowels until this is returned, often a matter of from four to seven days.

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*Read before the Tennessee State Medical Association, Memphis, April 12, 13, 14, 1932.

All abdominal cases are kept perfectly comfortable with morphia if they can take it. If morphia nauseates, as it frequently does, then we do the best we can with codeine, pantopon and such like incompetent drugs. I often long for heroin. Water by mouth is not given until it seems certain there will be no peritoneal reaction. Food is not considered until after satisfactory bowel movement. In this connection I consider fruit juices as food and feel sure that an abdominal case can take care of an egg (soft cooked) or a piece of good steak much more easily than it can of an orangeade for instance. In a sense I might say that I forget the stomach and bowels after abdominal operations. My purpose is to keep the patient comfortable and supply him with water. If feeding is postponed beyond a week, I begin giving glucose intravenously. Of course it is given at any time as a stimulant, but I have little fear of "starvation acidosis," whatever that may be. Gastric lavage has been used very infrequently of recent years though it is instituted on the slightest suspicion of accumulation in the stomach and in this matter I do not wait for vomiting. Cases handled on the above routine need a stomach tube so seldom that when you do need it you find the rubber stiff from age, and have to get a new one.

I am more and more impressed with the advantage of leaving off preoperative purgation in those cases you have time to "prepare," with the absurdity of trying to make a patient's bowels move after an abdominal operation, with the absolute necessity of taking no risk of interfering with the retention of water by stomach or bowel in the name of nourishment, with the absolute curative value of opium or rather morphine, and with the utter senselessness of just doing things to sick people.

It is difficult for me to speak in polite terms of hypodermoclysis, and my opinion of the value of blood transfusion in nine per cent of cases in which it is used had best be suppressed.

I classify appendix cases as gangrenous, perforative, suppurative, abscess cases when the appendix is not found, and then all others, with a sub-head of hemorrhagic. Cases that have an appreciable area of the appendix undergoing gangrene are classed as gangrenous. If both perforative and gangrenous they are classified as gangrenous. When the appendix is not found in an abscess case the case is merely classed as appendiceal abscess. There were six of these abscess cases. The appendix not being found and removed, of course, the certainty of the origin of the trouble cannot be vouched for.

I use the Battle-Kammerer-Jalaguier incision invariably when a positive diagnosis of appendicitis is made and there is no suspicion of other pathology except from extension. When the pelvis is under suspicion I make a median supra-pubic incision, and in case of possible gall bladder or duodenal disease a right rectus incision. The right rectus incision is used here because a paramedian or parasemilunar incision above the umbilical level is complicated by the lineæ transversæ of the rectus, and because the right rectus incision gives better access to the gall bladder in the average case. Occasionally a gall bladder is so far back in the flank that a paramedian incision is very unsuitable and just the opposite location difficulty shows up occasionally with the parasemilunar. Drainage is placed by me always through a stab and in the right semilunar line in gall bladder cases. For this additional reason I do not like the parasemilunar incision. So far as the chance for hernia is concerned, of course the rectus incision is least desirable.

Probably my work differs in the matter of mere operative technic from that most of you are accustomed to follow more in the use or disuse of drainage than in any other particular. I am a deliberate (probably to many of you a slow) operator, but I think I am gentle with tissues (I certainly make a serious effort to be) and this may offset the loss of time.

I seldom bury catgut or any other material in the muscle of the belly wall. I use removable silk worm gut passed through the aponeurosis (and in some instances through or around the rectus or recti as the case may be) then crossed figure 8 fashion and out through the fat and skin. Two needles are used on each suture so each needle is passed only once through the skin and then from within out. The figure 8 is not completed by tying across the wound for the ends are secured, after being passed through short pieces of rubber tubing, by crushing perforated shot on them. This is the only method of securing silk worm gut sutures that I know of which enables you to absolutely control the tension made on the sutures. In spite of years of propaganda by everybody against tying sutures too tight it is the most common thing we do.

In connection with the matter of technic I wish to speak a good word for Michel skin clips, for one reason among others and that is, because they are removed early, and leave the skin wound in position to open promptly if any accumulation occurs beneath the skin.

I never drain a parietal incision, and only once in several years have drained through a wound used for operation on the abdomen. I watch all such wounds closely, using less covering than the bathing beauty of the recent years, and use a probe on suspicion. In my opinion wounds would do better without any dressing but people seem to have more modesty about wounds than they do about those parts which once in the dim past were called "privates," and on that basis concealed or at least screened. A voluminous dressing with imbricated adhesive, in hot weather to say the least, encourages the softening of the sealing film of dried serum by perspiration which is certainly not an antiseptic solution. Bacteria have no picks and shovels, and in my opinion wound infection never occurs *after operation* unless something wet is held in contact with the skin, and even then it does not penetrate to any depth.

As those of you who have ever listened to anything I had to say know that I do not drain the peritoneum except for visceral purposes, so to speak, (a visceral opening that cannot be closed, a weak suture line, necrotic tissue that cannot be removed, an area of peritoneum so changed that it is no longer peritoneum as in a well walled off abscess etc.). It is not always the worst cases that require drainage on this basis for a virulent infection may have produced no changes of the above described nature, and in one case that I will give you briefly later there was no postoperative reaction of the peritoneum, and none in the belly wall in keeping with general evidence of infection. In my opinion this patient died from blood stream infection after a postoperative period giving no evidence of peritonitis, and with only mild localized infection in the lower angle of his parietal wound. As you will see from the summary quite a few drained cases escaped wound infection which probably proves that drainage was not needed in some instances at least in which it was used because of the well known superiority of the peritoneum over fat in overcoming infection.

If the fat could resist the traumatism, and contact at operation with infected material, then certainly the peritoneum could have handled anything short of a leaking viscus. The fact that some closed cases had wound infection proved nothing more or less than the well established antiseptic powers of the peritoneum already mentioned. Of the seven (7) deaths in this series four (4) occurred in undrained cases. These require some detailed statement though I guess the three (3) deaths in drained cases (two (2) of gangrenous and one (1) of perforative appendicitis) can be attributed to the will of Providence since the technical feature of drainage was complied with. Of the four deaths in undrained cases one resulted from Pneumonia in a man fifty (50) years old on the 9th day following operation for what might be classed as sub-acute appendicitis. Another in a young woman twenty-three (23) years old. followed an operation for a similar appendix and occurred on the 3rd day. She was given a hypodermic of morphia grs. 1/4 and hyoscine grs. 1/200 at 6:30 P.M. She was then given a magnesium sulphate and glycerine enema at 7 P.M. Following this she complained a great deal of what we thought were gas pains and about 9:30 P.M., she became suddenly unconscious and soon stopped breathing. Her heart action was good and remained so until 3 P.M. the next afternoon. Artificial respiration was carried on continuously during these hours, and so long as this was done her color was good. As soon as her circulation began to show any change it dropped rapidly and she died at 3:30 P.M. I have no idea what caused her death, but I have used neither hyoscine nor salts and glycerine enemata since. In justice to hyoscine it should be stated that she had had it the day after operation without visible ill effect.

No surgeon would have drained either of these cases and we can count them out in making our deductions as to the risk of not draining. This leaves us two undrained cases that died with infection—one forty-four (44) days and the other forty-five (45) days after operation.

One of these was a white man thirty-one (31) years old who was taken sick four days before admission. His white blood cell count on admission was 9,500. A differential count was not made. Temperature 99 4/5 degrees F., pulse 72, respiration 24. At operation, which was done immediately after admission, the distal half of the appendix was found to be gangrenous, but the cæcum at the base of the appendix was not badly damaged, and a satisfactory closure over the stump could be made so no drainage was used. On the sixth (6th) day after operation infection showed up in the lower angle of the parietal wound which continued to drain until a few days before his death though for the most of the time the amount of drainage was very slight, and his wound did finally heal completely. The morning after operation his temperature went to 102 degrees F., but dropped to normal by the fourth day, stayed normal for three days and then went the following day to 101 degrees F., though his wound was draining satisfactorily. It is useless to follow the vicissitudes of his temperature from then on, but it ran from 96 degrees to 104 degrees F. His pulse made no pretense of following his temperature, never reaching one hundred (100) until the thirty-third (33) day. His white blood cell count was 14,000 on the 11th day and 40,000 on the 40th day. His death occurred on the 45th day. During all this time his abdomen was perfectly flat or scaphoid rather, and it was never possible to make out any evidence of an abdominal or pelvic mass. His urine was negative at all times. His chest was gone over repeatedly by folks who know how without any positive findings. Blood cultures were negative. Dr. W. D. Haggard, who saw him with me on the 40th day, thought he likely had multiple small abscesses of the liver. No postmortem was held.

The other undrained case that died from infection was a white girl fourteen (14) years old who was taken sick three days before admission. She was admitted with a temperature of 101 degrees F., a pulse of 104, and a white blood cell count of 33,000. Her urine was normal. Appendicitis with complicating generalized peritonitis was diagnosed. At operation a gangrenous appendix which hung in the pelvis was removed, its base satisfactorily secured by inverting purse strings sutures and the wound closed without drainage. She remained in the hospital twenty-five (25) days after operation and during this time her temperature never touched normal but once, running from 98 4/5 to 100 most of the time. Her wound was probed and bloody pus evacuated on the 11th day. She still had a small amount of drainage (a temperature of 99 1/5 F., and a pulse of 90, when she was allowed to go home on the twenty-fifth (25) day because of desire on the part of her parents to avoid expense. Repeated efforts had been made to exclude any abdominal or pelvic focus before she left. In spite of being a child she made an excellent patient, and was so free of soreness that deep palpation and firm bimanual compression could be made without muscular resistance, but nothing was found. On the tenth (10th) day after dismissal she was readmitted with a temperature of 102 2/5 degrees F., pulse 120, respiration 30. Her white blood cell count was 27,400. It had dropped to 9,750 before she left following her first admission. Her urine was still normal and remained so throughout except for sugar following intravenous injections of glucose.

Investigation of her wound under local anesthesia showed apparently unsatisfactorily superficial drainage which was corrected with no improvement in her general condition. Careful palpation at this time and frequently in succeeding days did not reveal any evidence of a mass not directly connected with the parietal wound. Her pelvis particularly, though she had had a pelvic appendix, remained perfectly clear at all times. On the 17th day after re-admission she was given a general anesthetic and a sinus was found leading into a perinephritic pocket. This was drained, but by this time all the tissues of her parietal wounds had taken on a gangrenous appearance, and she died on the twentieth (20th) day.

So far as I could find this death was due to a gangrenous process in the patient's belly wall and retroperitoneal cellular tissue. It was very chronic for final gangrene and the amount of enduration was not at all in proportion to what one would expect in a chronic process. The only point I wish to make is that so far as I could tell an appendix hanging free except for adhesion in the pelvis and from a freely movable cæcum started an infection which caused death without any evidence of peritonitis either general or local after the first week. The parietal wound even apparently healed firmly at first but as fever persisted the skin incision was opened and a probe evacuated pus. I cannot myself figure that the absence of drainage had anything to do with four of the deaths in this series. The other three patients were drained but death was not in any of these connected with the presence of drainage.

There were six cases diagnosed as appendiceal abscess. Five of these were in children from two (2) to ten (10) years old. One was in a woman twenty-nine (29) years old but I hardly think there was a reasonable chance for the abscess to have resulted from anything but the appendix. All abscesses were opened into through the Battle-Kammerer-Jalaguier incision using aspiration for evacuation of the contents. Always a limited careful search was made for the appendix and drainage was placed through a stab, the wound of exploration being closed in the usual way. Many of the other drained cases might have properly been classed as appendiceal abscess for the line of demarcation between a definite abscess and a localized peritonitis with pus formation is not distinct.

When adhesions separated satisfactorily, and the structures including the appendix could be recognized the cases were classed according to appendiceal pathology. The term "abscess" was reserved for those with definitely changed peritoneum, when naturally location and removal of the appendix was difficult and dangerous if not impossible.

TABLE 1

CASES	NUMBER	WOUND INFECTION	DEATHS
Total	500	45 (9%)	7 (1.4%)
Gangrenous	71 (14.2%)	26 (36.6%)	4 (5.6%)
Perforative	14 (2.8%)	7 (50%)	1 (7%)
Suppura've	202 (40.4%)	7 (3.4%)	0
Abscesses	6 (1.2%)	5 (83%)	0
All Others	207 (41.4%)	0	2 (.9 of 1%)

TABLE 2

CASES	NUMBER	WOUND INFECTION	DEATHS
Gangrenous	71		
Drained	24 (33.8%)	22 (92%)	2 (8.3%)
Undrained	47 (66.2%)	4 (17%)	2 (4.2%)
Perforative	14		
Drained	9 (64.3%)	5 (55.5%)	1 (11.1%)
Undrained	5 (35.7%)	2 (40%)	0
Suppura've	202		
Drained	2 (.9 of 1%)	1 (50%)	0
Undrained	200 (99.1%)	1 (.5 of 1%)	0
Abscesses	6	5 (83.3%)	0
All Others	207		
Undrained	207 (100%)	0	2 (.9 of 1%)

Two drained gangrenous cases escaped wound infection but one of these had a pelvic abscess.

Four drained perforative cases escaped wound infection.

One drained suppurative case escaped wound infection.

One abscess case escaped infection of wound used for exploration of the abscess.

(Any pus formation whatever about the parietal wound is classed as wound infection).

Following operation there were three (3) pelvic abscesses, all three in females, one in a drained gangrenous case, one in an undrained gangrenous case, and one in an undrained suppurative case in a child seven (7) years old. These were the only intraperitoneal collections of pus that followed operation. All cleared up promptly following vaginal drainage.

The gangrenous cases that recovered averaged 2.07 days between onset and operation while the four gangrenous cases that died averaged four (4) days.

In the perforative cases, however, the difference was very slight, 1.8 days for the recoveries and 2 days in the case that died.

Suppurative cases averaged 1.3 days, and abscess cases 7 1/2 days before operation.

All other cases averaged less than twenty-four (24) hours before operation for those with definite onset. Many including the two I lost had had grumbling discomfort over a period of days or even weeks, and I am convinced that such cases often have a distinct pathology associated with a blood stained exudate into the lumen of the appendix. At least I am sure that a blood stained exudate is suggestive of a sub-acute reaction rather than the virulent infection I once thought it indicated.

DISCUSSION

DR. R. K. HOLLINGSWORTH (Jackson): The fact that appendicitis is the most frequent surgical condition we are called upon to treat, and that practically one hundred per cent of uncomplicated early cases recover rapidly, has caused the condition to be regarded entirely too lightly by both the laity and the medical profession at large. This unwarranted attitude is undoubtedly one cause of the slow and gradual increase in the mortality rate noted in the past few years, and I welcome this opportunity of discussing a condition which has, I feel, been unjustifiably and perhaps somewhat unconsciously classed as a "minor" major surgical disease. Statistics tell us that the mortality rate from appendicitis is increasing in spite of lay education and impoved diagnostic means and technic. While this is undoubtedly due in part to delay in calling the physician and delay on the physician's part in calling a surgeon, it is also due to delay in arriving at a diagnosis and instituting prompt surgical treatment. In this respect many surgeons most certainly share in the blame. To attempt to diagnose the degree of inflammation and predicate treatment accordingly is a dangerous procedure. The only indication for operation is a diagnosis regardless of the mildness or severity of the symptoms.

I am in accord with Dr. Barr as to the choice of an anesthetic. A general anesthetic, unless it is definitely contraindicated, should be used. When contraindicated, local infiltration or field block is my choice. My experience with spinal is very limited, and I cannot bring myself to believe its routine use is safer and to be preferred to ether, gas, or ethylene. I must, however, disagree with Dr. Barr's choice of a local anesthetic. I can see no logical reason for employing a dangerous drug such as cocaine when equally good results can be obtained from a relatively safe solution such as procaine.

To drain or not to drain has always been and will continue to be a much-debated question, except in those cases with definite abscess or those in which rupture has occurred and soiling by intestinal contents has taken place. The question is one in which there can be no set rule. It must remain with the judgment of the individual operator at the time of operation, but I am personally inclined to what might be termed the more radical view—that is, that drainage should only be instituted when frank pus or fecal soiling are present.

Post-operatively, ample fluid intake is essential and should be taken in whatever manner is most consistent with the comfort and well-being of the patient. In the majority of cases, this can best be accomplished by proctoclysis, but I cannot share nor can I see any reason for the essayist's apparent aversion to hypodermoclysis and transfusion. I know of no means at our command by which we can more effectively treat the patient seriously ill with an infection, local or general, than by transfusion with saline, glucose, and blood. The patient with peritonitis should never have proctoclysis, and there is no better or more harmless way of assuring adequate intake in these cases than by hypodermoclysis or transfusion. Except in the presence of nausea and vomiting, I can see no reason why water in small quantities at frequent intervals cannot be started by mouth four hours after operation. As the patient's condition progresses satisfactorily, the amount is gradually increased until in the majority of cases enough fluid is taken by mouth to discontinue the proctoclysis in forty-eight hours. Albumins and orange juice, in the normally progressive case, can be given in small quantities after twenty-four hours, and I usually have the patient on a soft diet by the fourth post-operative day.

Acidosis is a complication which undoubtedly does occur, more frequently in children. It can be readily combated with glucose intravenously, by proctoclysis, or in the form of glucose candy, which the children can suck.

To give no food until the patient's bowels move, even though this be a week, is, in my opinion, decidedly contrary to the laws of physiology and is an excellent means of keeping the patient uncomfortable with gas. The anesthetic and the morphine used retard peristalsis. Food is a normal stimulus of peristalsis, and is, therefore, an essential in the reëstablishment of normally acting bowels.

As a small amount of gas in the intestines can cause much distress, I usually give a flatus enema within thirty-six hours, and I know of nothing more satisfactory than an enema of essence of peppermint, drams one to the quart. This can be repeated P. R. N.

In the control of pain and shock, morphine is our sheet anchor. However, I feel that its injudicious use is injurious, and we should be extremely careful that the patient's apparent need for morphia is physical and not mental.

Finally, let me say once more the mortality rate from appendicitis is too high. Make your diagnosis early, do not subject the patient to dangerous and unnecessary delay in trying to make too fine a diagnosis, and then, once the diagnosis is made, do not delay the institution of surgical treatment.

DR. E. DUNBAR NEWELL (Chattanooga): It is always interesting to me to hear a paper by Dr. Barr, because Dr. Barr tells us the truth as far as he knows it, and we know that. That is what we want in scientific medicine.

I am glad to see that Dr. Barr is getting cases of appendictis late, as we are. One of the things we constantly are fighting for is to see cases of appendicitis early, and apparently we are not seeing them much earlier now than we did twenty years ago. Our death rate from appendicitis in the late cases is almost as high as it was twenty years ago, because we are still getting cases of gangrenous suppurative appendicitis that we do not see for forty-eight or seventy-two hours after the onset. This is due largely to the patient, but also due to the doctor who first saw the case. It seems to be impossible to make them understand the early symptoms of appendicitis and that the treatment for appendicitis is operation. I don't believe we will ever get, in this section of the country, a lower mortality for appendicitis until the patient and the doctor realize that the treatment for appendicitis is immediate operation.

I do not believe we should risk the life of the patient in technically trying to make a perfect diagnosis. There are many cases that are so baffling that it is impossible to make an absolutely correct diagnosis. But suppose we do not make a correct diagnosis. No one should operate unless he is a competent surgeon, anyway; and if he has an abdominal case that requires immediate operation and he has not found appendicitis, he should go ahead and do the work. What difference does it make whether we get a correct diagnosis in all cases if it is a case that requires an operation? If we have taken out the appendix and have not found other pathology and have taken care of the patient in a general way, we have done the patient a favor, we have not done him any harm.

I would give a good deal if my appendix were out now, although I have never had a case of appendicitis. I certainly would not blame the doctor after he had faithfully and intelligently tried to make a diagnosis and had not done so.

I agree with Dr. Barr in most of the things that he says and does in the treatment of appendicitis, but in a few I disagree with him. In the past ten years in all of my cases of appendicitis I invariably use hypodermoclysis as soon as the patient comes to the operating room. If it is a patient that I have seen early, he receives only one hypodermoclysis. If it is a patient I have seen late and there is some infection in the abdominal cavity, we continue to use hypodermoclysis twice daily, 1,000 c.c. of 5 per cent dextrose and normal salt solution, until the patient can take hot water without nausea. It is a great relief to me to see my patients since I have begun this method of treatment. They are so comfortable, they do not have nausea, they do not have vomiting, they do not have after-pains, and I would commend it to Dr. Barr's consideration. They require very little nursing and very little opiates to give them relief.

As far as drainage is concerned, for the past five years I practically have done as Dr. Barr does. I do not drain any case except where there is necrotic tissue or where there is a frank rupture with spilling of the intestinal fluid into the peritoneal cavity. All my other cases I close without peritoneal drainage. I sometimes drain the wound, but not the peritoneum.

In my own cases (and we see many cases of appendicitis where formerly we would have drained) I get a very much lower mortality and a much more satisfactory convalescence. There is a far less infection of the wound in cases where I do not drain than in cases where I formerly drained. So far as the residual or pelvic abscess is concerned, I have just as many cases of abscess where I have drained as in cases where I have not drained. We have not found any difference whatever in the number of abscesses which form in cases where we have not drained and those where we have. They are about the same.

DR. E. M. HOLDER (Memphis): I think, with Emerson, that in every one there is something wherein I may learn of him and in that I am his pupil. We learn only in proportion as our ears, eyes, and fingers are educated to appreciate the teachings of the masters. I think I have ears that appreciate what Dr. Barr has said. I have eyes, and I have fingers, and I know if I were to differ with him he wouldn't pay any attention to it, anyway; so why do I do it? He is mule-headed. I have met him before in debate at medical meetings; I know him. So I just agree with him in everything he says; but as one of the masters, I always learn from his teachings.

I do think it would have been a matter of some enlightenment if he had given us the stature, in a general way, of his patients, their architecture, as Ex-President Taft called his build. When some one asked him to take a ride in an airplane, he replied: "You know my architecture isn't suited to that kind of transportation."

Late reports show that many times the point which tips the scale of these patients from recovery to death, or vice versa, comes in infection of the abdominal wall. We all know the peritoneum takes care of itself wonderfully well, but that the abdominal wall does not, particularly in fat people. You can't remove a gangrenous or perforated appendix through the abdominal wall without soiling the tissue, try as you will. Any way you try to do it there is going to be infection. The wall takes care of a little of it, but in fat patients especially it doesn't do it well at all, and that infection added to what you have on the inside many times determines the result.

What is the outcome? Lately many surgeons, in fat patients who have a type of severely infected appendix that had to come out through the incision, have left the wound entirely open, as Crile does in his very severe cases of goiter, no attempt being made to close the abdominal wound at all.

You may have a hernia; yes, but you save the patient's life. Close the peritoneum, without any drainage, if you please; put a little loose gauze down through the wound and leave it there. Take it out in a few days, as soon as the process of infection has disappeared. You may save some patients that way, Dr. Barr. You haven't lost many. I have never heard better statistics, but you remember Charlie Mayo once said: "You can prove anything by statistics, sometimes even the truth." I guess Dr. Barr has us on that—500 cases! It took about twenty years to accumulate this number, I suppose; but that's all right.

We all admit that 70 per cent or more of all acute abdominal conditions are appendiceal. Zachary Cope states that any pain of acute character in a man, woman, or child who has been previously well, that lasts over six hours, is in all probability a surgical condition.

We are losing more patients than we did formerly because more are being operated on and because more are being diagnosed properly. Why are we having so many gall-bladder cases? Because our confreres are making more prompt and correct diagnosis. The same is true of all abdominal castrophes.

If appendicitis accounts for 70 per cent of all surgical abdominal trouble, there aren't many others to think about. The others are rare—30 per cent altogether. If one has a limit of six hours in which to think it over, you have at least a little while to come to a conclusion. You have done no harm if you open the abdomen, as Dr. Newell recommends, even in the absence of a definite diagnosis. There is some surgical condition, anyway, probably that you can take care of. If you make a mistake now and then, it is not vital. I have never seen a man die from an exploratory operation. I have seen many die from the cause that occasioned the operation, but never from the operation. It is just a question of driving these facts home to the people from the medical profession. We have tried educating the public in cancer, which has done some good. We have tred among ourselves to promulgate the cardinal symptoms to the public, in abdominal conditions, which probably has done some good, but not very much.

After all, the all-important prompt decision lies in the hands of the physician primarily, and secondarily in the surgeon, because the physician sees first about 90 per cent of the abdominal attacks in their incipiency.

DR. EDWARD D. MITCHELL, JR. (Memphis): Gentlemen, I know of no condition that warrants a continued discussion as much as this subject of appendicitis. I think one reason our death rate has not dropped appreciably in the last few years is because the diagnosis is being made more frequently and we are seeing more cases. I think that the profession now is appendicitis-minded, and I don't believe we are going to have much decrease in mortality until we get the laity appendicitis-minded. In other words, if they will call in a physician every time they have pain in the abdomen, we will certainly see them earlier. If we see these early cases and operate on them early, as the statistics show, the mortality is low, whereas in late cases where complications have taken place our mortality is high.

In one of our hospitals in Memphis, where the majority of the patients come from the educated classes, only 25 per cent of the appendicitis cases last year showed complications—by complications I mean gangrene or peritonitis or abscess or perforation or what not; whereas in another of our hospitals, where the patients are mostly uneducated and unintelligent and one cannot see them early, 55 per cent showed these complications. I believe it is going to be up to us to broadcast the subject of appendicitis to the public, showing them the difficulties that can arise and beseeching them to come to us sooner. Until we see these cases earlier, before the complications take place, I don't believe the mortality is going to be much reduced.

DR. R. A. BARR (closing): I appreciate the discussion that this subject has brought out. Dr. Hollingsworth agreed with me in the main, and I am going to agree with him with a few exceptions. For instance, early operation, in my experience, doesn't insure recovery. In the very earliest and simplest cases that I got I lost 0.9 of 1 per cent.

Formerly I told patients that an early operation was absolutely safe, but I don't tell them that now, because I know it isn't so. There is a risk about any abdominal surgery, because all deaths that follow operation are classed as due to the operation. The surgeons themselves agree to this attitude and base their statistics on it.

I don't intend to say a word in defense of cocaine.

I have used it for years in a very weak solution. I have never had any poisoning from it. I have never used as much as two grains in any operation. I think it is relatively safe the way I use it. If another man prefers to use a weaker anesthetic in stronger solution and use a lot of infiltration with it, that is a preference I have no quarrel with. I know very few men use cocaine, and it is not my pupose to urge its use or even to say anything in defense of it.

As to hypodermoclysis: If I remove the lower sigmoid, rectum, and anus, I don't use proctoclysis, and maybe there are some other conditions in which I don't use it. I believe, however, that Dr. Newell is claiming a little bit too much for hypodermoclysis when he says it stops nausea and vomiting and makes the patient comfortable. I didn't know it was ever used for those purposes. Of course, the idea underlying the use of salt solution under the skin is to supply the patient with water. If your patient can be supplied with water without the salt in it by bowel, there is no reason for giving hypodermaclysis.

DR. E. DUNBAR NEWELL: Maybe it wasn't given properly.

DR. BARR: Maybe so, though I always give it myself. I have been told that about everything that I ever failed to get results in—that I didn't know how, and probably there is a good deal in that, but I do succeed in having proctoclysis given by nurses and porters. I practically never give water to seriously sick patients any other way. I want such patients to have a pint of water every three or four hours. Of course, there are a lot of patients who take water by mouth after operation, and so need neither hypodermoclysis nor proctoclysis.

My paper must have been misleading, because Dr. Hollingsworth misunderstood it. He says he often has his patients on soft diet the fourth day after operation. Practically always in simple cases I give mine a steak on the second day. With seriously sick people, however, I don't give anything by mouth and I don't try to move the bowels. I try to get them to retain water, and I keep them comfortable. The morphia given probably helps them retain water. I don't care a thing about gas as an indication for purgative enemata. What is the use of using purgatives on a paralyzed bowel? You can't give anything that will make a paralyzed bowel respond.

Transfusion of blood in 90 per cent of the cases is purely spectacular; it sounds like something. It still carries a thrill to the doctors, much more the public, when you talk about giving the patient blood. Often when given on indication it does no good, and more often it is given when it isn't needed at all. What is the use of bothering a gift donor to get the blood from them and bothering the patient to give it (and when the blood must be bought of going to the expense) if it isn't needed? It is the uselessness of transfusion that I complain about, and it is the painfulness and disagreeableness of hypodermoclysis that I complain of so long as the patient can retain a pint of water by bowel every three or four hours.

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H. H. SHOULDERS, M.D., Editor and Secretary

AUGUST, 1932

EDITORIAL

The Activities of the State Committees

Early in the month just ended the Cancer Committee of the State Association held a meeting, headed by Dr. Battle Malone, of Memphis, as chairman. Certain definite plans were made concerning the activities of this committee.

The Legislative Committee, under the chairmanship of Dr. H. B. Everett, of Memphis, has been active.

The Education Committee, headed by Dr. John M. Lee, of Nashville, as chairman, has been active.

On another page of this issue will be found the subject of disease prevention discussed in a very practical way and from the viewpoint of the practitioner.

Plans are being made to hold meetings in the various districts throughout the State for the purpose of discussing disease prevention in a very specific way.

The profession as a whole is being awakened as never before to the necessity for unified action in combating some of the evils that have crept into our body politic during the prosperous years.

The Government in Professions and in Business

At the present time there is a loud cry going up for the reduction of taxes. A large number of people are organizing themselves for the purpose of working toward these ends. Many of the people who are organizing themselves have been silent during the period these rapid increases in taxes were taking place. It is obvious that a state, county or municipality cannot reduce its overhead as rapidly as an individual or small business concern.

Minority groups have been going to legislative bodies and obtaining appropriations for activities which never were a necessary part of government. A large number of people have been silent. Not only have they been silent; they have not even voted. The people who were the direct beneficiaries of increased taxes have done a relatively large amount of voting and a relatively large amount of lobbying. The people who are paying the taxes have done a relatively small amount of voting and a relatively small amount of lobbying. Many of the minorities which go to the Congress and various Legislatures, go for the purpose of obtaining appropriations for activities which in the end help them financially. They are interested in the appropriations from a personal standpoint. They are not the true lovers of humanity they would have all of us think.

Our hope lies in the fact that large taxpaying groups are coming together for the purpose of reducing taxes. This will necessarily involve the purging of various political units of unnecessary government activities.

There is an old philosophy that we cannot have our cake and eat it too. It is true of government. We cannot have the government carry on business and compete with private enterprizes and at the same time collect a large amount of taxes from these competing concerns and individuals. We will go in one of two directions. One leads to the end that the government conducts all business; the other, to the end that the government conducts no business. The government can and should see that all who play the game play fair. This, in our opinion, is the highest end in government.

Longevity

Many of us have been thinking that people by and large are genuinely seeking for longevity. There is much evidence to the effect that this is not true. We believe that people are seeking happiness above everything else. They seek the restoration of health when it is lost. They seek to avoid the consequences of improper living after the emergency has arisen. Longevity, therefore, is not a primary thought in the minds of the people as they go about their affairs from day to day.

In recent years humanity has been compelled to pay for various services with the idea that these services would contribute to longevity. In these same years the suicide rate has increased to a point that it offsets much of the savings gained by preventive effort.

Happiness is not easily defined, nor can one person, or any group of persons, determine what will bring happiness to one person or another group. One set of circumstances will bring happiness to some one person. Another state of affairs will bring happiness to another. That which will bring happiness to an individual this year may not bring happiness to that person ten years from now. For these reasons we are individualistic. Each individual, therefore, must seek and find his own happiness. No one else can shower it upon him. Neither can the State shower it upon him. Money may bring it to one person. It will not bring it to another. One person finds happiness in doing something which another person regards as perfectly irksome. All efforts, therefore, to standardize the existence of people as to health, as to wealth, as to daily habits, as to education, etc., cannot help but bring unhappiness.

By and large, governments are taxing people more for the purpose of giving more service of various sorts to the public than at any time in the history of the world. We do not believe that a time ever existed when people were more unhappy. People are losing their homes to pay taxes, to render the services which various groups have thought would make people better and happier. The answer is that people are not better and not happier.

We surely have learned a lesson that the governmental policies which involve less government and more individualism, will contribute to the happiness of a large number of people—such policies as will enable the individual to earn and spend his earnings as he chooses in search of his own happiness so long as he does not jeopardize and complicate the existence of others.

DEATHS

Dr. E. S. Hopper, Memphis; Memphis Hospital Medical College, 1911; aged 46; died July 6.

NEWS NOTES AND COMMENTS

THE COMMITTEE ON CANCER

A conference was held in Nashville on July 25, 1932, in the office of the Commissioner of Health, for the purpose of formulating plans for a State-wide campaign for the dissemination of information concerning cancer. Representatives of the State Medical Association, of the Department of Public Health and of the Society for the Control of Cancer participated in the discussion.

It is proposed that each component society be requested to hold one meeting this year at which the program shall consist of a symposium on "Tumors of the Breast." The Committee on Cancer will communicate with the secretary of each component society, explaining more fully the purpose and plans for these special meetings. It is also planned to ask the newspapers of the State to publish articles containing information concerning cancer, which ought to be known by every one. These articles will be edited by the committee and be distributed through the coöperation of the Commissioner of Health. In addition, short talks will be prepared for transmission over the radio.

The only hope of lessening the incidence of cancer and its mortality is in education of the doctor and of the people to the importance of early recognition of cancer and of those things which may become cancer.

It is believed that such a campaign as has been suggested should accomplish much good.

The Giles County Policy

We, a committee representing the Giles County Medical Association, realizing that certain activities of the Giles County Health Unit are taking from us work that is justly ours, and in order to bring about an adjustment that will be conducive to the best coöperation of the two above-named organizations, hereby submit to the Giles County Board of Health the following resolutions:

Resolved, That the Giles County Health Unit refrain from administering rabies prophylactic treatments to indigent patients. Each physician is to take care of his cases, be they charity or otherwise.

Resolved, That the Giles County Health Unit refrain from vaccinating and inoculating of adults who are not in school; only teachers, pre-school and school children are to be so treated by the Health Unit. Physicians vaccinate all adults, thus making it possible for the Health Unit officials to devote time required for this to other more important problems. Adult smallpox contacts, however, may be vaccinated by the Health officials.

Resolved, That the Giles County Health Unit administer treatment only to patients with venereal disease who present a written statement from a physician designating that said patient is unable to pay for services and requesting that treatment be given at the Health Unit clinic.

Resolved, That upon adoption of these resolutions by the Giles County Board of Health that the Giles County Medical Association will indorse the work done by the Giles County Health Unit and pledge its coöperation and support.

Be it further resolved, That a copy of these resolutions be sent to the State Department of Public Health, one published in each of the local newspapers, one given to the Giles County Board of Health, and that one be recorded as a permanent record to the minutes of the Medical Association.

The above resolution is concurred in by the Giles County Board of Health. This, the 8th day of July, 1932.

We, the County Board of Health, realizing it is our duty to designate the extent of work done by the Giles County Health Unit, realizing that the volume of work has grown, the appropriation has decreased and the personnel has not expanded, and that the Giles County Medical Society has made these petitions and has further agreed to take care of this work which will not materially handicap any of those who wish to obtain such services, therefore decree that the Giles County Health Unit refrain from inoculating adults and also refrain from administering rabies prophylactic treatments. It is further agreed that people wanting these services go to their family physicians, who have agreed to do these services. This will become effective immediately.

This, the 19th day of July, 1932.

Giles County Board of Health.

Dr. A. F. Cooper, of Memphis, recently addressed the Lions' Club. Dr. Cooper discussed the relation between disease and crime.

Dr. Alfred Farrar, of Nashville, has located in Shelbyville.

Dr. John Ogle has recently returned to Sevierville after a severe illness in Nashville.

Dr. H. C. Capps, of Louisville, Ky., has located in Martin.

Dr. C. D. Giles, of Paris, has located in Gallatin.

Dr. J. C. Nichols, of Etowah, has returned home after being in the Knoxville Hospital as the result of a bullet wound. Dr. Nichols was shot in the arm by a burglar.

Dr. L. C. Ogle, of Etowah, received a broken leg when his car was wrecked on July 3.

Dr. P. E. Parker, of Sweetwater, has moved to Etowah.

Dr. J. P. Gilbert, of Nashville, announces the removal of his offices to 329 Doctors' Building for the practice of neuro-psychiatry and internal medicine.

What the doctors and druggists expect of each other in protecting public health was the subject of a joint meeting of the Memphis Drug Club and Memphis and Shelby County Medical Society on July 5 in the library of the University of Tennessee.

Dr. E. G. Thompson read a paper on the doctors and John S. Sheehan for the druggists.

The National Medical Association of Colored Physicians, Dentists, and Pharmacists will meet in Nashville in August. The sessions will be held in the New Meharry Buildings. This will bring to Nashville between three and five hundred men and women.

MEDICAL SOCIETIES

Anderson, Campbell, Loudon and Roane Counties:

The Anderson County Medical Society was host to the medical societies of Campbell, Loudon and Roane Counties in an all-day joint meeting held in Clinton on July 28. This meeting proved to be a very interesting diversion from the usual monthly meeting, and was well attended by members from all four societies.

The program consisted of a speaker from each society participating in the meeting. The papers were very interesting and instructive, and were freely discussed. So successful was this meeting that already plans are being made for future similar meetings.

An interesting and entertaining feature was the music and vaudeville program following the "Dutch Lunch." The scientific program was as follows: "Summer Diarrheas of Children," J. L. Heffernan, Jellico; "Auricular Fibrillation," V. O. Buttram, Devonia; "Reminiscences of Obstetrics," L. M. Scott, Jellico; "Metabolism," J. J. Waller, Oliver Springs.

Bedford County:

At the July meeting Dr. J. P. McCord, of Lynchburg, read a paper on "Typhoid Fever." Dr. Herman Spitz, of Nashville, spoke on "Modern Methods of Treating Asthma." Both numbers were freely discussed and a good attendance was present.

Giles County:

On June 23 Dr. E. M. Fuqua read a paper on "Headaches."

Hamilton County:

After two meetings scheduled for July and August, the Chattanooga and Hamilton County Medical Society will stage a full program in September. Every Thursday night in that month has a good program in sight. We list below the subjects which will be given before our September issue is received: September 1—"Prostatic Hypertrophy," by Dr. S. H. Barrett; September 8—"Otitis Media," by Dr. S. H. Long; September 15—"The Care and Treatment of the Insane," by Dr. J. B. Swafford.

Hardin, Lawrence, Lewis, Perry and Wayne Counties:

The July meeting was held on July 26 at Linden. The attendance was good and the program excellent.

Knox County:

The Knox County Medical Society does not let the summer stop its meetings. They keep going every month in the year, and every program is well attended. Here are some recent samples: July 12—Dr. James Cottrell, of Philadelphia, Pa., "Diabetes"; July 19—A moving picture on "Cancer," operated by Dr. A. H. Lancaster; July 26—"Blood Transfusion," by Dr. Dewey Peters.

Roane County:

The regular July meeting was held in Harriman on the 19th. A good attendance was present. Several interesting case reports were made. Dr. Waller was selected to represent Roane County on the program of the Anderson - Loudon - Campbell - Roane joint meeting held on the 28th.

Sullivan-Johnson Counties:

At the July meeting Dr. O. S. Hauk, of Kingsport, read a paper on "Cardiac Murmurs and Their Significance." Fifteen were present. At the business session a resolution was passed correcting a false impression that the physicians were receiving pay from the Welfare Council. In their appeal to the County Court for more funds the Welfare Council made two statements which might have been interpreted as meaning that the council was paying doctors' bills for the indigent. So the society proceeded to correct such an impression.

Williamson County:

Dr. Herman Spitz, of Nashville, spoke at the July meeting; subject, "Hay Fever and Food Allergy." A good attendance added interest to the meeting.

LOCATIONS WANTED

Portland, Me., July 26, 1932.

H. H. Shoulders, M.D.,
706 Church Street,
Nashville, Tennessee.

DEAR DR. SHOULDERS:

After graduating from the University of Wisconsin and from the Washington University Medical School, of St. Louis, I interned on the Neurological and Neurosurgical Services of the Boston City Hospital, and then connected up as a psychiatrist with the Judge Baker Foundation for the Guidance of Youth.

In September I shall be free to take up work in Psychiatry, Mental Hygiene, Child Guidance, or the writing field, with some other organization or hospital.

I am writing you in the hope that you may be able to help me in getting something in Tennessee, or elsewhere, suited to what experience and training I have had.

I am inclosing some data which will give you an inkling of my background, to help you in suggesting where I may be able to find suitable employment. I prefer to have work in which I can spend some time in further study and writing. Can you advise me how this can best be accomplished?

I shall be most grateful for any suggestion that you may be able to give me.

Yours very truly,

Chicago, July 25, 1932.

DEAR DR. SHOULDERS:

Do you know of a community in your State which is in need of a physician?

After seven years of postgraduate work in Vienna, at the University of Chicago Hospital, and at the Michael Reese Hospital, in Chicago, I am desirous of entering general practice in one of the smaller communities of the Middle West. I am a graduate of the University of Vienna, and am licensed in Illinois.

If you know of an opening, I shall be grateful for information concerning it, and concerning any reciprocity arrangement for licensing which your State has with Illinois. Thank you in advance for your courtesy.

Very truly yours,

(Names and addresses will be supplied by the JOURNAL office.)

GLEANINGS

MEDICINE VS. BIG BUSINESS

If Scientific Medicine should break down at any time as Big Business has just done, and as Big Business will continue to do at irregular intervals, disease and famine would again stalk forth as it did during the Middle Ages, and the ruin and destruction would be a thousandfold greater than when Big Business fails. Medicine is founded on science and ethics; business seems to be founded on empyrical knowledge and advertising, and a great deal of both. The highest type of medical service is that which always exists between the individual patient and his physician, while the corporate practice of medicine is only a makeshift at best. Perhaps medicine has something to offer Big Business in the way of organization and in the manner of living up to a real code of ethics.—*R. R. Ferguson, M.D., President of the Illinois State Medical Society, July, 1932.*

FAKE PUBLIC HEALTH LECTURERS

A very popular and apparently profitable phase of quackery of this particular day and time is the alleged public health lecture by self-lauded authorities. The general plan is to secure in some prosperous community an auditorium which will tend to connect the lecturer with either the school authorities, city or county authorities, or some popular church congregation. After this apparent connection has been established, the newspapers are flooded with paid advertising, usually couched in such terms as to deceive the public into believing that there is some scientific basis for the claims of the lecturer. Of course, the lectures are free, and there is always enough of mystery in the announcements to attract attention.

The catch lies in the usual offer of the lecturer to conduct private courses at so much per head, if there is enough encouragement, and frequently a variety of courses are offered. Frequently there is a book to sell, sometimes at an exorbitant price, considering either content or make-up. Sometimes the lecturer claims to be a physician, and perhaps he is, although generally not licensed to practice in the State in which he is lecturing. Sometimes he claims to be an eminent authority on health, but not a physician. Maybe he has been the health advisor of the President, or some celebrity at the moment in the public eye. One usually does not have to prove a claim of that sort. Sometimes the lecturer is connected with the moving-picture industry, and sometimes there is a film. Always there are peculiar and bizarre ideas, some of them extremely hurtful, but most of them, while foolish, inoffensive enough.

Few communities desire to have this sort of thing happen. If the medical profession will sit on the watchtower and warn chambers of commerce, better business bureaus, boards of health, boards of censors, and the like, chances are the enterprise will be blighted. It is not to the financial advantage of any community to have its money taken away by such methods, regardless of the danger to health and physical and mental welfare. Application to the Journal office will promptly bring such information as may be on file concerning any questionable enterprise of this character, and there is usually something that will be helpful.—*Texas State Journal of Medicine, June, 1932.*

OUR LEAD IN ACCIDENTS

In the United States last year a total of approximately 97,000 persons died accidental deaths. The fact gives the country an unenviable leadership among the nations of the world both in respect to the number of fatal accidents and in proportion to population. Our accidental death rate last year ran more than 80 per 100,000 of population. Canada came next to us with 63. England had only 42, Italy only 33, and Denmark only 24. France rated 54 accidental deaths per 100,000, but over there homicides are listed as accidents. Incidentally, the adoption of that plan over here would do fearful things to our accident death rate.

As has been true for a depressingly long term of years, the automobile last year was the greatest single cause of accidental death. Fatalities attributed to the use, or misuse, of motor cars are put down at 33,500, an increase of about 600 over 1930 in spite of the fact that there was a considerable reduction in automobile mileage. In addition to those killed, some 1,200,000 persons suffered injuries in automobile accidents and about 100,000 of that total were permanently impaired. The money cost of these same automobile accidents, counting in medical expense, the loss of wages, the cost of insurance, and so on, is put at $700,000,000 for 1931. It is impossible to do more than guess at the amount of property loss, for many States do not record automobile accidents at all unless some one is hurt. A total loss of $1,000,000,000 is probably not an exorbitant figure.

For Tennessee and every other State where a real drivers' license law is not in effect, one of the most important reflections is that States where satisfactory license laws are in force have shown a definite, cumulative improvement in the matter of automobile accidents. A hint to the wise is supposed to suffice, too.—*Nashville Banner.*

ABSTRACTS OF CURRENT LITERATURE

ANESTHESIA

By Hugh Barr, M.D.
Medical Arts Bldg., Nashville

Postoperative Pulmonary Complications: A Study of Their Relative Incidence Following Inhalation Anesthesia and Spinal Anesthesia. A. Lincoln Brown, M.D., and Margaret Warren Debenham, M.D., San Francisco. The Journal of the American Medical Association, July 16, 1932.

In an unselected group of cases, 812 in number, operated upon consecutively at the San Francisco Hospital and at the University of California Hospital from July 1, 1929, to June 31, 1930, there is presented some interesting statistics. In inhalation anesthesias, 474 in number, there were 1.3 per cent of pulmonary complications, while in 338 spinal anesthesias there was a percentage of 7.4.

Of 63 abdominal operations pulmonary complications developed in 4.8 per cent of inhalation anesthesias and in 12.5 per cent of spinal anesthesias. In 172 cases of operations upon the lower extremities and perineum there were no pulmonary complications following inhalation anesthesia and 4 per cent from spinal. In 55 operations upon the torso there were no pulmonary complications following either form of anesthesia. Surgery upon the head, neck, and upper extremities, 184 in number, inhalation resulted in 1.7 per cent and none in spinal.

DERMATOLOGY

By E. E. Brown, M.D.
Doctors Building, Nashville

The Treatment for Lichen Planus With Intramuscular Injections of Bismuth Salicylate in Oil. By H. D. Grossman, M.D., Chicago, Ill., Archives of Dermatology and Syphilology, July, 1932.

The author reports a series of fifteen cases in which bismuth salicylate is given intramuscularly in doses of 1½ grains once each week for about ten to twelve treatments. Frequently fewer injections were needed. Cures were effected in fourteen cases and improvement in one other.

Verrucae Vulgares (Palmar and Plantar) Treatment by Intramuscular Injections of Bismuth Salicylate. By Sophie A. Lurie, M.D., Los Angeles, Cal., Archives of Dermatology and Syphilology, July, 1932.

The author reports the use of intramuscular injections of bismuth salicylate in thirty-four cases. These were cured with no relapse after one year. Two grains was given at every dose. The largest number of doses was nine and the smallest one. Warts located about the nails were the most resistant. Those on the hands less resistant and those on the feet responded most rapidly.

OPHTHALMOLOGY

By Robert J. Warner, M.D.
Doctors Building, Nashville

Tumors of the Orbit. B. Samuels. American Journal of Ophthalomogy, July, 1932.

This paper is a brief pathological review of some of the tumors of the retrobulbar space, the so-called concealed tumors, including those of the optic nerve, all of which sooner or later produce exophthalmos. The tumors are classified according to certain peculiarities as follows:

Group 1. Tumors producing marked inflammatory reaction (of slow growth), such as (a) carcinoma, (b) cylindroma.

Group 2. Tumors producing little or no inflammatory reaction (of rapid growth), such as (a) sarcoma, (b) hemangioma, (c) neurofibroma (Recklinghausen's disease).

Group 3. Tumors of the optic nerve, such as (a) endothelioma, (b) glioma.

Group 4. Tumors invading the retrobulbar region by extension from within the globe.

Group 5. Metastic tumors of the orbit, such as (a) carcinoma, (b) sarcoma (very rare).

Group 6. Inflammatory pseudotumors of the orbit. Two cases of mistaken diagnosis in which exenteration of the orbit was done are reported.

Group 7. Enigmatic; cases of exophthalmos which anatomically divulge no pathology, illustrative of which one case is reported in which cocainization of the nose caused complete disappearance of the exophthalmos.

(Eighteen figures, discussion.)

Abadie of France has a new treatment for tabetic atrophy of the optic nerve. It consists of subcutaneous injections of 2 mg. of atropine and an intravenous injection of .01 gram of mercuric cyanide. All the patients to whom Abadie applied this treatment found the progression of their atrophy checked, and that there was an increase in their visual acuity.

PEDIATRICS

By John M. Lee, M.D.
Doctors Building, Nashville

Serum Sensitiveness After the Administration of Toxin-Antitoxin. Louis Tuft, M.D., Amer. Jour. Dis. Children, July, 1932.

In order to determine if injections of toxin-antitoxin (equine) induced sensitivity to horse serum, a series of studies was made, including tests of the skin, tests of the eyes, and examinations of serum for antibodies, both in a control group of 100 patients who had not received toxin-antitoxin or other serum, and in a larger group who had. Practitioners were questioned as to the frequency and character of reactions occurring when the injection of serum was repeated.

These studies proved that after the injection of toxin-antitoxin (equine) into children, 27.9 per cent were sensitized in varying degrees to horse serum; this sensitization was not limited to the skin, but affected other tissues of the body; sensitization is more apt to occur in allergic children or children of allergic families.

Reinjection of larger amounts of horse serum carries the danger of severe reaction. To test for sensitivity in these cases, it is advised that 0.02 c.c. of a 1:100 dilution of horse serum be injected intradermally. If a positive reaction occurs at site of this injection, a non-horse serum should be used if available. If a non-horse serum is not available, the equine serum may be given in small doses increased gradually at regular intervals together with small doses of epinephrine.

The use of diphtheria toxoid or toxin-antitoxin made with goat serum antitoxin in active immunization against diphtheria will avoid sensitizing the patient to horse serum, and will obviate the necessity for precautions with injections of serum.

SURGERY — GENERAL AND ABDOMINAL

By John L. Dies, M.D.
1213 Exchange Building, Memphis

Acute Intestinal Obstruction. Due to Mesenteric Defects Requiring Massive Resection. Charles Reid Edwards, M.D. The Journal of the American Medical Association, Vol. 99, No. 4, July 23, 1932, pg. 278-281.

The mesentery is infrequently the site of departure from the normal to the extent that there is an interference with the physiologic functions of the intestine. And it is so peculiarly constructed that an adaptation to change in the intestine may be effected without embarrassment to normal functions. Since the mesentery is the structure supporting the blood, lymph and nerve supply to the intestine, it would appear that one should frequently encounter conditions within the mesentery requiring surgical intervention, but this is not the case. Most of the acquired changes within the mesentery have their origin in inflammatory processes, and unless there is a complete interruption to the circulation, as in mesenteric vascular occlusion, surgical intervention is rarely indicated. Abdominal infections extending into the mesenteric lymph glands and postperitoneal lymphadenitis developing from other sources seldom demand anything more than simple drainage, as the circulation to the intestine remains intact. Neoplasms may, and frequently do, involve the mesentery, but in a majority of instances, a radical surgical procedure is contraindicated. Cysts and other tumors developing in this region may require radical surgical measures, but they are rare. Adhesions, always to be considered as of inflammatory origin, frequently demand operation for the relief from pain and obstruction, but they can scarcely be looked on as inherent defects of the mesentery. Trauma of the abdomen may rupture mesenteric vessels or separate the intestine from its mesentery, causing severe hemorrhage, or it may produce a wound in the mesentery which will allow coils of intestine to pass through, and later, to become strangulated.

Congenital defects do occur. The mesentery may be excessively long, or, on the contrary, too short; sections may be missing, or there may be anomalous developments in the arrangement of the blood supply. The translucent spaces may be actual openings in the mesentery. Therefore, a hole appears within anastomotic loop, and it may permit a coil of intestine to pass through. Intestinal obstruction caused by the passage of a loop of small bowel through this abnormal opening in the mesentery is probably the rarest of all factors responsible for intestinal obstruction, and the infrequency of this condition with a consideration of the extent of its pathologic manifestations prompts me to bring it to your attention.

Brown, in 1920, summarized twenty cases of this malady, and Cutler, in 1925, tabulated data concerning these cases and eight others, two of which were from the surgical clinic of the children's hospital, Boston. Elston, in 1926, reported a case in which, "a small ring-like aperture, about the size of a lead pencil," was responsible for the obstruction. His patient recovered after resection of 76 inches (193 c.m.) of small intestine. Strangulation began 4 inches (10 c.m.) above the ileocecal junction, where the opening was located.

McWhorter, in 1928, added the report of a case coming under his observation which is unique in that there was an opening in the mesentery in the middle of the abdomen, through which the two ends of a bifid omentum had fused, producing an obstruction of the jejunum by constriction. His patient recovered following a resection of a portion of the omentum and suturing of the aperture in the mesentery.

Judd, in 1929, added the report of a case in which a mesenteric defect was the cause of an obstruction to the colon. The opening and the lower part of the ileum had passed through this rent. With Hamaker's case, there are but two cases on record in which obstruction of the large intestine has occurred.

According to Hohlbaum, the hole in the mesentery is usually near the ileocecal region, and this observation has been confirmed by Brown, Cutler, Elston and Edwards, but Judd and McWhorter found apertures more centrally located.

The opening is usually just mesial to the artery supplying the terminal part of the ileum, the appendix and the first portion of the cecum. This accounts for the fact that the terminal part of the ileum and the cecum are not included in the gangrenous process.

Evidences of previous inflammations have been observed by Hohlbaum, as stated by Prutz, but accumulating data discredit inflammation as a frequent cause of this anomaly. Trauma as a possible factor has been noted by Cutler in seven instances in the twenty-eight cases abstracted and tabulated by him, but it was not observed in the three cases subsequently appearing in the literature, namely, those of McWhorter (one), Judd (one), Elston (one), and the two herein reported.

In Brown's cases, the edges of the aperture were rough, and there was a history of recent trauma. In a great majority of other cases the edges of the hole are described as being smooth, suggesting that they have been of long standing. In my two cases, they were smooth and rather hard, both mesenteries being of average thickness and apparently healthy, and the apertures were about 1 c.m. in diameter.

Just what mechanism is responsible for the passage of a loop of bowel through this aperture is a matter of conjecture. McWorther recorded the history of attacks of pain and indigestion in his case, and from the nature of the case this is readily appreciated; but in only six of the remaining cases was there a history of previous attacks of pain, and there is nothing in the cases herein reported to indicate that there had been occasions when the intestine had passed into or through this opening. The size and shape of the aperture would almost preclude the possibility of a spontaneous reduction once the bowel had passed through. In most intestinal obstructions due to internal herniation of the bowel through pre-existing foramina or into fossae, the amount of intestine involved is limited by the size of the cavity into which it escapes. The same condition does not prevail when the bowel protrudes through a mesenteric defect, and once a loop has been projected through this opening, distention within the loop and peristaltic movement serve to force more and more of the intestine through the opening, only to become strangulated.

The percentages of recovery has been high when reduction of the bowel could be effected. The age of the patient seems to have little influence on the end results when resection was necessary; also, the amount of intestine resected does not govern the outcome. Early operation is the only hope the patient has for recovery. Of the known operations, there have been eight resections with four recoveries and thirteen reductions (not including McWorther's case, because the intestine did not pass through the mesentery) with eleven recoveries, and in all twenty-one operations with fifteen recoveries, a mortality, therefore, of 28.5 per cent.

UROLOGY

By Tom R. Barry, M.D., F.A.C.S..
and F. K. Garvey, M.D.
Medical Building, Knoxville

Treatment of Cardio-Vascular Syphilis. H. H. Hazen. American Jour. of Syphilis, Vol. xvi, No. 3, p. 289.

He states that there are 400,000 fresh luetic infections annually in the United States and that 85 per cent of these will develop some cardiovascular lesion.

Ehrlich in 1909 stated that cardio-vascular disease was a contraindication to arsphenamine. Wile in 1922 stated that while remarkable improvement might follow this therapy, yet an aggravation of symptoms would soon follow. Two factors are suggested as explanations, first that the syphilitic products have been too rapidly replaced by scar tissue, or second, that their rapid disintegration has produced a chemical change deleterious in its effect on the local lesion.

Wile emphasized his belief that a patient whose antisyphilitic treatment has been adequate and whose heart condition is asymptomatic, should receive no further treatment.

Inadequately treated patients with asymptomatic lesions should be treated with the heavy metals or tryparsamide. All authors agreed that all treatment should be begun with bismuth or mercury or possibly iodides. This is to prevent a Herxheimer reaction.

In cases of congestive failure there should be no antisyphilitic treatment until compensation is established.

In coronary disease arsphenamine should not be given, likewise in myocarditis.

A study of 90 cases of aortic insufficiency and 8 others with various lesions showed that the expectancy of life was increased from 32 months to 65 months. There was little change in the expectancy in those receiving only one or two courses of arsenic and a metal.

Hazen studied 50 cases of aneurism. Ten were observed as controls and the average duration of life from beginning of symptoms was 11 months against 30 months in the treated cases.

Forty-eight cases of aortic insufficiency were observed, the vast majority of whom entered the hospital because of mild congestive failure. Treatment was not started in any case before compensation was established. The expectancy in twelve untreated cases was 36 months and in treated cases only 40 months. Fifteen cases of aortitis were treated, 8 were improved and 7 not improved. Two cases of heart block were treated with excellent results.

He concludes:

1st. Patients with congested heart diseases should not receive antiluetic treatment until compensation is established.

2nd. Thoroughly treated patients should receive no treatment even in presence of a cardiac breakdown.

3rd. Bismuth, mercury and the iodides should always precede the arsenicals.

4th. Proper treatment greatly increases life expectancy.

Syphilis and Trauma. Greenbaum and Madden. American Jour. of Syphilis, Vol. xvi, No. 3, p. 297.

In 1877 Tarnowsky, after experiments on humans, concluded that "in early syphilis in particular, either the spirochaete hastens to an injured spot or that at this period, the spirochaete-infected skin is highly susceptible to injury." More recent experiments in the human show that "acute surgical trauma does not, in the majority of instances, appear to cause syphilitic complications."

Three factors must be considered in any study designed to affirm or deny the relationship of trauma to syphilis.

1st. The age of the infection.

2nd. The character of the injury.

3rd. The onset of the alleged syphilitic response.

In these experiments a square centimeter of skin was frozen with carbon dioxide, the results studied. Patients with open lesions were not used. The fluid in the produced lesions were examined by the darkfield and also inoculated into rabbits. Fifty experiments were done, but only 19 are reported.

Their results were uniformly negative and they conclude that "spirochaeta pallida is not directly concerned in the production of a syphilitic response to trauma."

BOOK REVIEWS

Diseases of the Coronary Arteries (Myocarditis), by Sutton & Lueth. Published by the C. V. Mosby Company, St. Louis. Price, $5.00.

The publication of this monograph is illustrative of the great interest in the chronic degenerative conditions of the heart, boldly called myocarditis in this text.

The rather recent appreciation of heart disease as a cause of death, coupled with the recognition of coronary thrombosis as a clinical and pathological entity, is sufficient warrant for a publication of this kind.

As in all texts in which a studied effort is made to separate angina pectoris and coronary thrombosis as entirely different conceptions, the reader finds himself at times in a maze of more or less confusing terminology. The sooner we learn that coronary thrombosis is often angina and that angina is often due to coronary infarct, the clearer will be our thinking and the saner our therapeutic approach.

The details of symptoms, pathology and pathological physiology of coronary disease are all well brought out in the text.

Not the least attractive feature of the book is a list of drugs used in cardiac disease and the reasons for their selection to meet special indications. —W. H. W.

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Volume XXV SEPTEMBER, 1932 No. 9

CARCINOMA OF THE CERVIX*

Frank Ward Smythe, B.S., M.D., F.A.C.S., Memphis

THE mortality from cancer is second only to that from heart disease. Fourteen and three-tenths per cent of women over forty die from cancer; thirty per cent of these deaths are from cancer of the uterus. This thirty per cent represents four and twenty-nine-hundredths of the total deaths, and ninety per cent of these deaths from uterine cancer are from those lesions arising from the cervical portion of that organ. The above percentages give a mortality of three and eighty-six-hundredths per cent and show the cold fact that two out of every fifty-one women dying, after the fourth decade of life, die from carcinoma of the cervix.

Such a frightful death rate is far too high, but it can be reduced, and this reduction depends upon the profession (doctors and nurses) always keeping in mind what is now known about this lesion, and seeing that each woman is given the benefit of this knowledge.

The cause of carcinoma has not been proven, but regardless of this fact and regardless of whether one leans to the cell theory, the filtrable virus theory, the lymphatic stasis theory, or any other theory, it is positively known that, while every chronic cervix does not undergo a malignant change, practically all carcinomata of cervix form on old chronic irritations. Such irritations may have been chemical, traumatic or bacterial, or perhaps some combination of these agents.

Believing that many patients have not been thoroughly investigated because of their age, it is thought advisable your attention be called to the fact that age has nothing to do with cancer of the cervix. While a large percentage of cases occur beyond forty years of life, this in no way protects the younger patients afflicted with this disease, for they are patients in whom, everything else being equal, the cancer is more rapidly fatal.

The youngest patient to my knowledge, seen in Memphis, was eighteen years of age. Hensinkveld reported one dying at the age of twenty, five years after operation for carcinoma of cervix. Aquinage, 1925, reports a case fourteen years of age, also Ewing one of fourteen years. Bonner reported a case occurring at twelve years of age, that was living two years after treatment by radium and X-ray. From the Central European clinics in the last two years have been reported several cases aged seven and eight. From the same district, 1930, the postmortem on a child sixteen months of age, having had a vaginal hemorrhage for ten months, disclosed a carcinoma of uterus. Bumm-Ascheim reports a case of a baby seven months of age, still nursing, which died, and the postmorten study disclosed cancer of this organ.

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*Read before the Tennessee State Medical Association, Memphis, April 12, 13, 14, 1932.

To illustrate the large number of these cases occurring in younger women, may I state that I personally have had forty-two women twenty-nine years of age and under with cancer of the cervix. My extreme age limits have been from eighty-three to twenty-one.

So it is seen that age limit in carcinoma of the cervix is nothing.

In making a diagnosis of cancer of the cervix, one should never forget that each female presenting herself for consultation is a potential malignancy, and this is increased if she complains of any abnormal discharge, bloody or otherwise. She need not be cachectic, nor need she have lost weight and strength, nor is it necessary for her to have a profuse foul-smelling discharge from the vagina. These signs are found in cases of cancer of the cervix. They are found far too often, and when present usually means the patient is rapidly approaching her doom. So the symptoms are not very valuable for the protection of the patient, because when they occur, signs have been present before. In order that these signs may be found as early as possible, it is necessary that the individual present herself for examination at definite intervals, while she is apparently in perfect health. Of course, if she will not do this, no delay should ensue following any abnormal symptoms. But, as mentioned above, it must not be forgotten that signs are present before symptoms occur. These early signs must be found by a careful vaginal examination, a careful inspection of parts through a speculum, aided by a good light, and, when necessary, examination, under the microscope, of the section taken from the abnormal appearing or palpated part, never forgetting that the highest percentage of apparent cures is in these cases where the microscope is necessary for diagnosis.

When the above investigations have been made, what is the treatment? If the irritated cervix does not prove malignant, it must be cured so as to prevent, as far as possible, a future malignancy from occurring (may I digress to state that these old chronic non-malignant cervices cannot be cured by local applications or douches; the irritated parts of the cervix must be completely eradicated). If the cervix proves malignant, then, according to present knowledge, its treatment must be by surgery, radium or X-ray, either alone or in some combination.

Before presenting the treatment of these cervical cancers, I believe it proper to mention their cellular pathology and their clinical or anatomical classification.

As to cell structure, they are divided into two main types, the squamous-celled type comprising approximately 97-98%, and the adenor or glandular-celled type making up the other 2 or 3%. Both of these are further described as being graded 1, 2, 3, or 4, depending upon their cellular activity—the more activity, the more rapidly growing, but, nevertheless, the more radio and X-ray sensitive.

Clinically or anatomically, cancers of the cervix are divided into four groups. In group one the lesion is confined entirely to the cervix; in group two the lesion is confined to the cervix and the small portion of the vaginal wall, but with no fixation nor infiltration; in group three, regardless the size of the primary lesion, no matter how small, there is some fixation and infiltration; in group four, the local lesion is extensive, the organ is fixed and there is much infiltration. Of course, in group four would also come those cases with palpable glands and reappearing growths. However, it must not be forgotten that this clinical or anatomical classification is not entirely reliable; the small appearing lesion may have metastasized and involved the regional lymph glands.

Returning to the treatment, it may be said that the highest per cent of apparent cures in cancer of the cervix is obtained by means of radium and X-ray. These agents are the method of choice in all the squamous-celled growths, regardless of the clinical grouping.

In view of the fact that the glandular-celled type is not so radio-sensitive as squamous-celled ones, I feel that surgery has a definite place as a part of the treatment of this type. Of course, the number in which surgery is indicated is extremely small—namely, the first clinical group. Only a few of these are ever seen. In these few cases the surgical part of the treatment should be merely a rather widespread Panhysterectomy— not an attempted Wertheim. Disregarding its high primary mortality, the Wertheim operation has always seemed to me to be a beautiful theoretical procedure. It aims at the removal of the upper part of the vagina, all of the internal genitalia, together with the glands and lymphatics of the broad ligaments, the sacro and lumbar glands and the glands along the ureters—an extensive dissection, which I doubt can be done, even on a cadaver. However, if it can be done and the patient survive, the theory is not carried far enough. It should also include the removal of the inguinal lymph glands, frequent sites for metastases.

I, like Bloodgood, feel that such a dissection is unnecessary. If the glands are involved, no cures result; if they are not involved, they need not be removed.

Without burdening you with the minute details of the three chief schools of radium therapy—the Brussels, the Stockholm and the Paris—I will state that in cancer of the cervix they are all agreed on the use of the gamma ray from the comparatively small amount of radium over a long period of time, and in addition a saturation with deep X-ray.

I have had only a few cases in which the Brussels technique has been followed. It has not especially appealed to me, because it necessitates the opening of the abdomen and the plantion of emanation seeds or needles. The accurate planting of these in this part of the body is extremely difficult, and also it has not yet been proven that this technique obtains a higher percentage of apparent cures.

The chief difference between the Stockholm and the Paris school is that the former gives its radium treatment in broken doses, while the latter gives all its radium therapy continuously. I have had experience with both techniques, and knowing that living cancer is a continuous process, and feeling that it should be attacked as early and as radically as possible, and having obtained my best results with the Paris technique, I prefer that.

My method for radium therapy is as follows: A general and local preparation of the patient as for any vaginal operation. If the hemaglobin is below forty per cent, transfusions are indicated. Gentleness should be the key word in all operative procedures; it must be that word in the handling of all malignancies. After proper anesthesia, when indicated, the cervix is exposed. It must not be traumatized. No tenaculum should be used unless absolutely necessary. If this is required, the instrument should grasp the part as far as possible from the malignant lesion. The depth of the cervico-uterine cavity is next ascertained. This is necessary because it is essential that the radium extend the entire length of this. In addition to this distribution, radium should be placed across the cervix and each lateral fornix. The vagina is packed with gauze.

The actual amount of radium used varies from 50 to 62½ milligrams. The total dosage received by the patient is from 6,000 to 7,200 milligram hours. Every 48 hours the radium is removed, the vagina cleansed and the radium replaced.

The first series of X-ray is started within two weeks after the radium is applied. I have had some cases when X-ray was started while the radium was insitu. Apparently most of these patients tolerated this extensive therapy well, although a few of them complained of a rectal disturbance which passed away in two to four weeks. Two more series of heavy X-ray are given at six-week intervals. In frankly infected cases the first X-ray series is given before the radium, as advocated by Healy.

If the case is one of adeno-carcinoma, in the first clinical group, the radium treatment as above is given. Hysterectomy is done in the fourth week following, and as soon as sufficient healing has taken place, the three series of X-ray are given.

After the above treatment has been given, no further therapy is used, unless an apparent cure results.

The patient is advised to return for observation every two months for the first year; and then, if all seems well, every four months for the next year, and then every six months thereafter. Of course, she is instructed to report at once if any abnormal symptoms arise.

If an apparent cure results and a later observation shows a suspicious area, it is assumed to be a reappearance. No biopsy is taken from this lesion, and it is treated with either emanation seeds or needle, followed by one, or better two, series of X-ray.

Naturally the above outline of treatment is for those cases in which the desired or optimum therapy can be given with hope of some apparent cures. In those later cases where palliation alone is hoped for, technique will vary, depending upon the particular patient and her particular lesion. As long as such a patient continues to improve under palliation therapy, it should be continued until she has obtained the optimum amount of both radium and X-ray. Occasionally one is agreeably surprised with an apparent cure in a late case.

SUMMARY

(1) The mortality is far too high; it can and must be reduced.

(2) Since it occurs at all ages, each female is a potential cancer of the cervix, and, in order to be fully protected, must present herself at definite intervals for examination, and any cervical lesions eradicated.

(3) The diagnosis is not difficult, and is made by palpation, inspection and microscopical study.

(4) The treatment depends upon the type and group. All need radium and X-ray. The glandular type of first group, in addition to these agents, should have surgery after radium.

(5) Lastly, a woman with a suspected or proven carcinoma of the cervix should not be referred to a surgeon for just surgery, to a roentgenologist for just X-ray therapy, nor to a radiologist for just radium; but to a man who, with the assistance of an able pathologist, will diagnose and classify the lesion, will operate on those few cases where surgery is indicated, will give proper radium treatment to all, and see that each patient receives the benefit of X-ray therapy.

DISCUSSION

DR. W. S. ANDERSON (Memphis): Dr. Smythe has given us a most excellent paper, and has covered all the field, I think, in connection with malignancies of the cervix. He has given a very beautiful outline of his treatment.

I want to emphasize a point that he has emphasized also concerning the mortality from carcinoma of the cervix. I think that this mortality is entirely too high. What is the cause of it? There is some cause somewhere; somebody is to blame. I think primarily the patient is to blame for delay and neglect in reporting to her family physician; and, secondly, sometimes her family physician, who probably puts her off, not making a satisfactory examination. When he has made a satisfactory examination, if he himself is not prepared to take care of these cases he should refer them, as Dr. Smythe has brought out, to some one who is able to properly take care of them, either if they are in the very early stages where they may be operated on, or in the second or third stages where they can have the benefit of radium and X-ray for either curative or palliative treatment.

For a long time we thought that malignancies were largely confined to women of middle life. That we know now is a fallacy, because as we investigate these cases we find that women of younger life are also subject to them. It has been my experience that the younger the woman the more fatal the case, and it calls for more radical treatment than in a woman past the menopause.

We can educate the public and we can educate the family physician in regard to these cases to give them early attention, and we can also improve our mortality by taking care of conditions that arise in the cervix from childbirth, where we have an old tear and an irritation; we know that such cases are much more subject to malignancy than those that have had no children. These lacerations can be repaired; or if the condition is such that there is a marked tear, then the cervix should be amputated.

There is one type of malignancy of the cervix that I would especially call your attention to, and that is the adenocarcinoma or the carcinoma of the canal. Frequently the patient complains only of a small discharge or occasional bleeding. We inspect the cervix and don't see anything at all unless we are very careful to dilate; and if on dilatation and getting the scrapings we find we have a malignancy of the canal, that calls for very intensive treatment.

I agree with Dr. Smythe that the two elements, radium and X-ray, should be combined, and we want to hit these cases hard at first to get the results; for if we do not, they become radiosensitive, and with repetition later on it is pretty hard to get any results.

DR. SHIELDS ABERNATHY (Memphis): The pessimism with which carcinoma of the cervix has been looked upon by the laity and by the profession always furnishes an opportunity for a great deal of good by a paper like Dr. Smythe's.

Up until 1920 the results in any form of treatment of carcinoma of the cervix were highly disappointing. Wertheim probably did more than any other man in the perfection of his operation, but even then in the hands of such a master as he was the mortality rate was 30 per cent. In the hands of the average surgeon you can readily see what the primary mortality rate would be.

Since 1920 a great deal of very splendid work has been done. Personally, I have been interested in this particularly since 1919, and have had quite a big series of cases in which I have used radium. I personally have not done a hysterectomy in any case since 1919. I have felt that if radium could bring about a very marked regression and amelioration of symptoms in the very advanced cases, it certainly ought to cure the early cases. With that in view, I have not done a hysterectomy. I have had some disappointments, of course, in the early cases; some of these cases are radioresistant, and some of the greatest disappointments are in the cases where you expect a cure and don't get it. In some other cases where you don't expect so much you see the most spectacular results.

I happened to run across an article yesterday, which is one of the most illuminating things I have read in a long time, by a man named Weaver, from Hollywood. If you will permit me to read a few of these things, it will give you an idea of what is being done over the world and the attitude of those who are giving special study to the management of carcinoma of the cervix. This man Weaver is the chairman of the Cancer Commission of one of the Hollywood hospitals, and he made an extensive trip throughout this country and Continental Europe and visited sixteen clinics; so if you will bear with me, I will give you just this synopsis.

In this country he says in eight clinical centers the cures range from 64 to 80 per cent in the early cases. That in itself ought to dispel to a certain extent the pessimism in the profession. The old idea that when a doctor discovers a patient has a cancer, especially when they wait until there is odor, which a great many men seem to think is the pathognomonic sign of cancer, and then throw up their hands, should be done away with.

The primary mortality of the Wertheim operation was 30 per cent. That has been dropped to 8 per cent by Weibel in his last 500 cases. This man Weibel has had over 1,000 cases in which he has done the radical Wertheim operation, and necessarily he is a past master at this particular operation. Weibel's average in all of his cases is 13.8 per cent primary mortality against 2.1 per cent to 0.0 in radiological clinics. That in itself would indicate to you the relative merit of the two procedures in reference to primary mortality.

In these radiological clinics that he visited—for instance, in the Cancer Hospital in London—the average dose is 6,700 milligram hours after the Stockholm technic. In the Chelsea Hospital (Sir Victor Bonny is the director) the Wertheim operation is carried on in 50 per cent of the cases. This man Weaver states that Sir Victor Bonney probably operates on more cases than any other man outside of Weibel. The other 50 per cent are irradiated. In Berlin, at the clinic of Stoeckel and Wagner, the average dosage is from 5,000 to 6,000 milligram hours, followed by the modification of the Schaute vaginal hysterectomy. In Prague they operate on 10 per cent of the cases; in other words, that evidently means the first-degree cases according to the grouping of Schmitz. In 90 per cent of the cases, where irradiation is used, they use 6,000 to 8,000 milligram hours. In Vienna, in the Paham clinic, Schaute's operation is used in the first-degree cases. The relative cure is 50 per cent. In Munich, in Doederlein's clinic (he was the first gynecologist in Europe to use radium in the treatment of cancer of the cervix, beginning in 1913), he reports 28.2 per cent cure of all cases; that includes all four groupings. He uses pretty large doses there—9,000 to 12,000 milligram hours. In Zurich, irradiation, followed by the Wertheim operation, is used in a good big per cent of cases. In Berne, the Wertheim operation for all first-degree cases; all others are given 7,000 to 8,000 milligram hours. In Paris, in the Curie Foundation, of which Regaud is the head, and also in Hartman's clinic, at the Hospital Dieu, they use a little bit different technic from that used in any other clinics in the world; they have stem applicators there, containing three needles. The upper needle contains 6.66 milligrams of radium, and the other two contain 13.3 milligrams. They also have a vaginal applicator where there is vaginal involvement, which they call the colpostat, in which there are 53 milligrams of radium incorporated, and they use this over a period of five to seven days. These applicators are removed daily, the vagina cleansed out, and the radium is replaced daily. The total amount of that runs between 6,500 and 7,200 milligram hours. In Hartman's clinic the vaccine of a gram positive diplococcus which they have been unable to identify so far, yet which has been found to be fairly constant in all these infected growths, is prepared and used locally, and they seem to think there that this preparation of the patient brings about a better response to radium and not so much reaction. They seem to feel that they have improved the situation somewhat, in so far as local reaction is concerned, by the application of this vaccine.

In Memorial Hospital, in New York, which by and large is a cancer clinic, they use the stem applicators containing emanation. I believe Dr. Smythe brought out Healy's technic of giving deep therapy X-ray even before and after, particularly in those infected cases. They give the deep therapy at first until the lesion clears up somewhat, and in a week or ten days applicators containing emanations are applied. They also have vaginal applicators containing emanation, and the dosage is from 5,000 to 7,000 millicurie hours.

In all clinics the deep therapy X-ray is used in conjunction with radium. At one time I was very highly enthusiastic about deep therapy, and I saw that period come along which is always marked by a little too much enthusiasm. That was before the present-day technic was developed, and I have seen a great deal of harm done by too drastic treatment. I feel sure that a good many cases in my early work were shoved off a little quicker than they possibly would have gone anyhow by too much deep therapy. However, in the last few years the technic has been improved, and I feel that with our increased knowledge, particularly in the preliminary preparation of the patient, and in our improved judgment, we don't have the disastrous results that we had, say, eight or ten years ago.

I have followed the treatment advocated by Bailey and Janeway, who probably did more to develop that work than anybody else in this country. It is on the order of the Stockholm treatment. I have tried the Stockholm treatment some, but I have not seen any particular advantage in that, and I still stick to the original treatment as advocated by Bailey and Janeway, in that I give the application of radium at weekly intervals, three doses, with the X-ray sometimes before and sometimes afterwards, depending upon the condition of the case.

I think a paper of the type of Dr. Smythe's is always timely, and maybe some day we are going to get people a little more enthusiastic about this subject of cancer of the cervix and with our combined efforts will be able to bring these patients to examination earlier and be able to improve our results.

DR. J. A. CRISLER, SR. (Memphis): To simplify the matter about which these men have been talking, it might be well to say that all cancers of the cervix at any stage where it can be diagnosed clinically belongs to the radiologist. We older chaps can look back to the time when we had some marvelous results from extensive surgery, but those results were few and far between.

These men are making a direct and definite study of the situation in radiology, and they are really accomplishing something. I do not think that cancer in the cervix or anywhere else in the body belongs to the man who happens to own some radium and makes a superficial attempt at understanding its various processes. I do think where intelligent men have given definite, long-time efforts directed toward the cure of cervical cancer, they ought to have the opportunity of handling these cases from their very earliest inception. I, for one, have quite some time ago given up surgery on cancer of the cervix and turned the matter entirely into the hands of the radiologist.

DR. C. R. CRUTCHFIELD (Nashville): Cancer of the cervix is a very timely subject at this time, and I think that the profession should realize that if the cases are seen early and treated early, as Dr. Abernathy has brought out, the five-year cures, so called, can be brought up to 60 to 80 per cent; and if the cases are seen late, of course the treatment cannot be undertaken, or even if undertaken we can only salvage from 5 to 10 per cent.

I think the profession should understand that the early diagnosis of carcinoma of the cervix is the keynote of the treatment, and don't wait until you get the so-called classical symptoms of carcinoma of the cervix. That is not a symptom of carcinoma of the cervix; that is a symptom of destruction and breaking down of the cancerous tissue, which usually precedes death if some treatment is not instituted promptly. Like the diagnosis of cancer of the breast in which we get the retracted nipple and the ulceration, that is too late to do much good. We must get an early diagnosis. The cases of carcinoma of the cervix that the older surgeons cured by operating upon them and removing the so-called suspicious ulceration of the cervix before the pathologist made the diagnosis are the cases in which radiation would cure from 60 to 80 per cent.

We have been using radiation alone in the Haggard clinic since 1919, and our results have been far superior to the results that we obtained from surgery. As has been brought out, only from 5 to 10 per cent of the cases fall in Groups I and II that are amenable to radical surgery, and before the days of radiation to the cervix 90 per cent of the cases were practically lost and hopeless before we had anything to do with them. In some 250 cases that we have had we have used practically the same technic. It is a technic modified after Janeway and Bailey at Memorial Hospital. We average from 6,000 to 8,000 milligram hours of radium over a period of six months. We give the first dose of radium the heaviest and see the case at the end of two months, and if the case has progressed satisfactorily we give a very small dose of prophylactic radium, and then at the end of another two months we see the case again and give a third dose of radium. During this period of six months we give monthly doses of heavy X-ray through four portals of entry, front and back. We have cases that are alive and well; we have two that went more than thirteen years; we have one that is in her seventeenth year since she was operated on for cancer of the cervix. She got a recurrence a year and a half after a radical panhysterectomy, and with three radium treatments this case is living and well today. It is seventeen years since she was operated on and fifteen years since she had her radium.

DR. L. T. STEM (Chattanooga): My results in referring cases to the radiologist at the beginning were very disheartening. I think I referred about six cases. Most of them came very late. Of course they hurriedly died.

In 1928 I had a young woman come to my office as I was going away on a vacation, who had been bleeding for two years, and for six months pretty profusely. She showed a very severe secondary anemia. She was thirty years of age, and on vaginal examination revealed the whole cervix and the vaginal wall entirely surrounding the cervix was involved in one large indurated mass. She had a bloody, watery discharge and a terrible odor. I told her friend who was with her that she wouldn't be alive six months; she had carcinoma of the cervix, and the only hope in the world I had for her was radium, and I advised her to see my friend, Dr. Marchbanks, for radium treatment. I was gone two months on my vacation, and when I came back, Dr. Marchbanks called me in to see this patient. Much to my surprise, this cervix was almost normal in two months. That has been four years ago. At the end of four months her cervix was as normal as any woman's cervix. She is living and happy and working today. It shows that even with such an enormous destruction in some cases it is not too late.

DR. F. W. SMYTHE (Memphis): I certainly appreciate the discussion from these gentlemen. There are one or two points I should like to mention in reiteration of what I presented. I feel that Dr. Bonney could not operate 50 per cent of the cases that we see of carcinoma of the cervix; unless he had a cold and was used to a great many dirty cases, he couldn't even examine 50 per cent of them, and I am sure he couldn't operate 50 per cent.

Surgery is used, by those who advocate surgery, only in the first group. If some one were to make a comparison between the mortality of surgical treatment of carcinoma and treatment by radium and X-ray, to be fair he should limit himself to the first group, which also would get the radium and the X-ray, and I assure you that the women otherwise perfectly healthy except for the little primary lesions on the cervix would have no mortality from radium and X-ray. Of course, it is out of the question to consider any surgical procedure on any group except the first group.

Dr. Stem's patient I am sure we see duplicated a great many times, and I feel had that particular lesion been classified (and no doubt it was), he would have found it was probably in the fourth group in Broder's classification, with a great deal of activity. We find that often. We must not give out too bad a prognosis because the growth is extensive. I have seen large growths that grew entirely into the upper part of the vagina; there was no infiltration or fixation of the organ; I classify those in the first group. The prognosis there is excellent, I am sure.

The therapy that we use is the same as the French school, with one exception. We radiate the entire uterine cavity. We do not know just how we are going to arrange our radium until we have the patient in the operating room to measure the depth of the cavity. We want to radiate the entire area, so radium is placed across the cervix by means of a colpostat in each lateral fornix. Regaud and his coworkers change their radium every day. I did that at first. Sometimes by things that we don't do we learn. We work in the hospitals in Memphis, and we have found that it made no difference if we left it two days, it was just as satisfactory; there is more discharge, but no effect on the patient's constitution; so we rapidly picked that up and changed our radium every forty-eight hours instead of every twenty-four hours.

According to the discussion, two of the doctors use Janeway's technic, and it is highly satisfactory in their hands; but I feel I would rather use the French technic and treat these malignancies with all the radium we are going to give them in six days rather than in six months. I think that is the better procedure, and certainly I know we are getting our best results by following the Paris school.

We get those late cases every day; they are too late usually to do anything but palliative treatment, but sometimes we are greatly surprised. I have three patients, in the fourth group anatomically, who are apparently cured over four and one-half years, and I have seen them in the last two months.

Not only must the woman be educated to present herself for examination when she is feeling well, but she has to present herself to a physician who will examine her. I know we do, of course, but every week we see a woman who consulted a physician fifteen months ago at change of life. We ask:

"Did the doctor examine you?"

"Yes."

"What did he think about this?"

"He said it was change of life."

"Did he examine you vaginally?"

"No, he rubbed my stomach."

"How did you happen to come to the hospital?"

"The doctor told me to."

"When did you see him?"

"Five days ago."

"The same man?"

"No, I saw Dr. Blank this time, and he said I had better be examined. He said he didn't know what was the matter, but I had better come to where it could be found out."

I hold no brief for the physician who does not examine his patients, so I tell the patient: "Well, you have such-and-such a lesion. It is malignant; and when you go home, you go back to see the last doctor you saw." I tell them frankly that the first man only took up their time and took their money for nothing.

Gentlemen, I thank you.

THE CLINICAL MANIFESTATIONS, TREATMENT AND PREVENTION OF ASCARIASIS*

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Introduction

DURING the past few years the problem of ascariasis in the United States has received considerable attention. During this period information concerning the incidence, distribution, clinical manifestations, treatment, and prevention of this parasitic infection has been obtained. It has been shown that in certain parts of this country ascaris is more widely distributed than any other intestinal parasite of man. In view of the new facts which have been developed concerning ascaris, it is essential that this information be made available to those individuals who may be confronted with this problem.

THE PROBLEM OF ASCARIASIS

Ascaris is acquired by mouth transmission entirely. After the eggs pass from the intestinal tract and are deposited on the surface of the soil in feces, a period of from two to three weeks under average climatic conditions is required before the embryonate stage or the infective form of the egg is reached. Ascaris eggs will develop on almost any kind of soil and they are very resistant to adverse climatic conditions. Development to maturity does not begin as soon as these forms are ingested. After the eggs are swallowed, the larvæ escape and penetrate the intestinal mucosa. They gain access to the blood stream and are carried through the liver and heart into the pulmonary circulation. In the capillaries of the lungs they act as emboli and escape into the alveoli. From the alveoli they migrate into the bronchi, trachea, larynx and esophagus. They then pass through the stomach into the upper part of the small intestine where they develop into adult worms. This path of migration has been proved experimentally in animals and also in an experimental infection of man in which ascaris larvæ were recovered from the sputum. A period of from five to six weeks is required from the time the eggs are ingested until the worms develop to maturity in the small intestine.

An analysis of the ascaris problem in Tennessee shows that it is present over a wide area of the State. Figure 1 shows the incidence of ascaris in Tennessee. In a study of 31,999 individuals for intestinal parasites in 71 counties of Tennessee, 8,664 or 27.6 per cent of them were found to harbor ascaris. The presence of this parasite was demonstrated in 70 of the 71 counties studied. These counties contain approximately 74 per cent of the rural population of the state. The incidence of ascaris, however, is not uniform throughout the state and is much higher in the hilly and mountainous areas than elsewhere. This can be seen in Table 1.

TABLE 1

Distribution of Ascaris, 1929-1931

Division of the State	No. of Counties Studied	Total Examinations	Per Cent Positive		
			Total	White	Negro
East Tennessee	24	12,551	36.6	37.1	20.0
Middle Tennessee	30	13,843	27.9	30.2	14.7
West Tennessee	17	5,612	3.6	6.4	2.7

Environmental studies, which have been made in all sections of the state, indicate that the habits of people with regard to excreta disposal are more important in maintaining a high incidence of this parasite than any other factor. In West Tennessee it has been shown that human excreta are usually deposited at a considerable distance from the house. In Middle and East Tennessee where ascaris is prevalent the excreta are found in close proximity to the house in such locations as the front yards, chimney corners, and under houses. Sometimes sweepings from kitchen floors and bed rooms contain viable ascaris eggs. Under such environmental conditions children acquire this parasite readily by getting the ascaris eggs on their hands and into their mouths while at play.

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*Read before the Tennessee State Medical Association, Memphis, April 12, 13, 14, 1932.

Children in the preschool and early school ages have been found to harbor this parasite in greatest numbers. In the white population studied 36.1 per cent of the children between the ages of 5 and 9 years were found to have ascaris. In the group between 15 and 19 years the incidence was 21.8 per cent. In the groups above 20 years of age there was an average incidence of 13.8 per cent. Even among those over 60 years old 10.4 per cent had ascaris.

Clinical Manifestations

The clinical manifestations of ascariasis can be divided into two groups, (1) nonsurgical and (2) surgical. In a recent investigation of 107 white and 60 Negro children with ascaris and a suitable number of controls the clinical manifestations were studied. A majority of the children were of school age. In those children with ascaris, abdominal discomfort and disturbed sleep were the most prominent symptoms. The abdominal discomfort varied in intensity from slight nausea to definite cramplike pain which was either generalized over the abdomen or localized to the region of the umbilicus.

It is interesting to note that nose picking and grinding of the teeth were not noted to any greater extent in those children who had ascaris than in the controls. Constipation, convulsions and respiratory symptoms, were no more frequent in those with ascaris than in the controls.

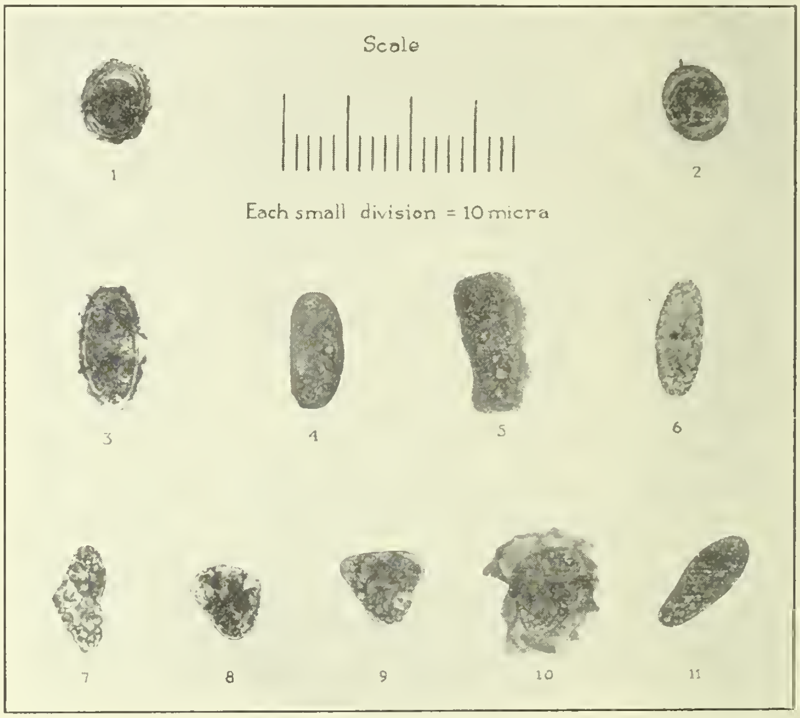
The physical examination of both patients and controls showed that most of the children were in good physical condition. The majority of children in both groups were within normal weight limits. The physical findings were those which can be found in any group of rural children.

In children under ordinary conditions with ascaris there may be no physical signs present from which a diagnosis of ascariasis may be made. Occasionally in individuals who are hypersensitive to ascaris, protein, urticaria and other allergic phenomena may be seen. Several such instances have been noted in students and laboratory workers who handle the worms. In some parts of the world where ascaris is very prevalent, various atypical pulmonary signs and symptoms have been described. These probably arise during the period of migration of the ascaris larvæ through the lungs.

That ascaris may cause serious surgical conditions is not questioned. There are reports from all parts of the world of intestinal obstruction due to the worms becoming matted together into a mass and blocking the small intestine. There are also records of the worms blocking the common bile duct or the pancreatic duct or invading the appendix. The adult worms are notoriously prone to migrate from their normal habitat in the small intestine especially if there is an elevation of the body temperature. It is not uncommon at such times for them to pass from the body through the anus, mouth or nose. Laryngeal obstruction caused by ascaris during the course of diphtheria has also occurred. As a result of their power to penetrate various organs and tissues, ascarids have been found in surgical wounds, in hernia sacs, in abscesses of the peritoneal cavity and in subcutaneous abscesses of the abdominal wall. They have been known to perforate the intestine at the site of typhoid or tuberculous ulcerations. As a rule, in instances such as these, a diagnosis of ascariasis is seldom made except at operation or autopsy and the resulting mortality is high. In children, who apparently have some acute surgical condition of the abdomen, it is always necessary to rule out the possibility of ascaris.

In the examination of the blood of the two groups mentioned above, no significant changes could be demonstrated either in the red blood cells or hemoglobin content. The average total leucocyte count was normal. The differential leucocyte count was not disturbed except for an increase in eosinophils. In the white children with ascaris, an average of 8.9 per cent eosinophils were found while in the Negroes an average of 5.3 per cent was found. Eosinophilia was not constant. No relationship between the number of worms present and the percentage of eosinophils in the blood could be demonstrated.

From the foregoing it is evident that there are no constant clinical manifestations by which a diagnosis of ascariasis may be made. The only dependable method is that of microscopic examination of the feces. If this is done practically every case of ascaris infestation should be found. In the diagnosis of ascaris from the examination of the feces it should be noted that unfertilized ascaris eggs may be seen. If they are not recognized the diagnosis will be missed. The following photomicrograph illustrates both fertilized and unfertilized ascaris eggs.



TREATMENT

Various substances have been used in the treatment of ascariasis. The oldest of these is perhaps santonin. This drug has been used all over the world and the conditions under which it was used have not been controlled. At the present time the opinion prevails that santonin is not only ineffective against ascaris but dangerous, frequently producing xanthopsia and other symptoms of intoxication. For these reasons it is not used as frequently as it has been in the past.

The oil of chenopodium (oil of American worm seed) is used extensively at the present time. This drug was first used as an anthelmintic by Baumler and Fribourg in Europe in 1881 in the treatment of hookworm. The toxic properties of the substance were noted at that time. Schuffner and Vervoort (1913) used it in Sumatra in the treatment of hookworm. The results obtained by them were better than those following the use of any other anthelmintic. Since then it has been used for the treatment of other intestinal parasites.

The drug is usually given early in the morning. The patient should be prepared by being given a light meal the night before treatment. No purgative is necessary as a preliminary measure. Breakfast the morning of treatment should be omitted. The dose of chenopodium is usually one minim for each year of age up to the age of twenty. For individuals above twenty, 2 c.c. is the usual dose. The drug can be given in one dose or in two doses at hour intervals. A saline purgative should be administered two hours after the anthelmintic.

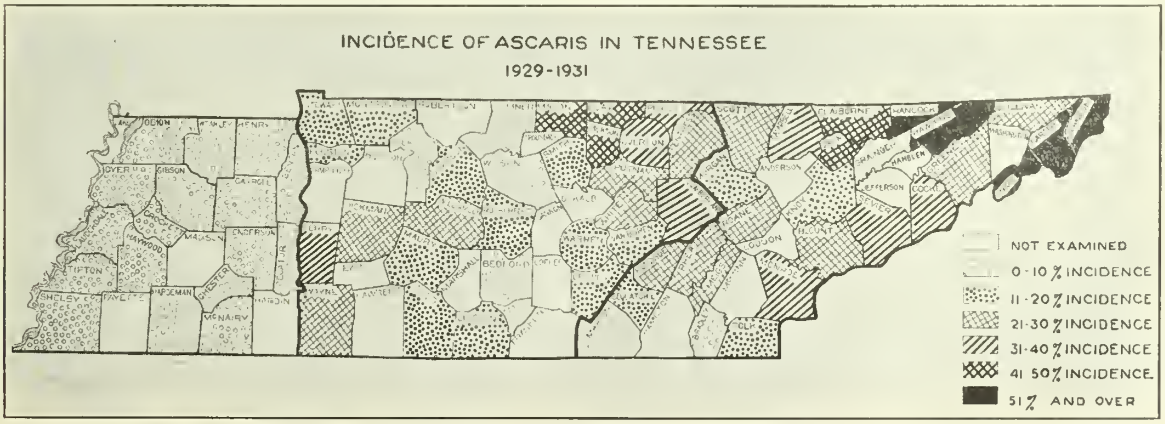
The oil of chenopodium is frequently followed by dizziness, tinnitus, nausea, vomiting, and tachycardia. These symptoms are usually mild and disappear following the evacuation of the bowels. Death occasionally is associated with the use of this drug. When this occurs the symptoms enumerated are marked, and, in addition, there are usually convulsions followed by prostration, slow respiration, coma and tachycardia. In combating these symptoms of intoxication, gastric lavage and immediate elimination of the bowel by enemata should be secured. Stimulation with caffein and general supportive treatment which should include the use of digitalis should be instituted. There is a marked variation in both the effectiveness and toxicity in the oil of chenopodium from various parts of the world. As yet no accurate method of standardization has been developed for this drug. Chenopodium has an accummulative effect and should not be repeated earlier than 14 days after the initial dose. The drug should not be given to individuals who have cardiac, renal, hepatic or gastro-intestinal disorders. It should be given with caution to debilitated or poorly nourished persons. The oil of chenopodium has been used in ascariasis because no other substance which was as effective and less toxic was known.

Since the introduction of carbon tetrachloride as an anthelmintic, it has been considered by some writers to be effective in cases of ascaris. It has been shown by Lamson that carbon tetrachloride does not kill ascaris, but stimulates the worms, and, as a result of this, the worms may migrate or form a mass, which obstructs the lumen of the bowel producing an acute surgical condition. For this reason the use of carbon tetrachloride should be confined to the treatment of hookworm.

It has been only recently that an effective anthelmintic has been introduced for treatment of ascariasis. In 1924 Leonard showed that crystals of hexylresorcinol in hard gelatin capsules could be ingested for long periods of time without deleterious effect. The drug was used at that time for the treatment of pyelitis. Lamson, Ward and Brown in 1930 showed that it was very effective in producing disintegration of *Ascaris suum* in vitro. The experimental use of hexylresorcinol in animals showed that it was effective in removing ascaride. As a means of testing the toxicity of this drug, these workers took daily doses of it without any unpleasant symptoms except a mild burning sensation in the epigastrium. Following these experiments the drug was used in one hundred human cases of ascariasis with encouraging results. At that time it was suggested that crystalline hexylresorcinol could be used as an ascaricide. Recently the results of the use of this substance as an ascaricide under field conditions were reported. In 2,100 cases treated by Lamson, Caldwell, Brown and Ward, their previous opinion of the non-toxicity and effectiveness of hexylresorcional has been confirmed.

Following the administration of hexylresorcinol in 1930 to 1,500 patients with ascaris it was found that full therapeutic doses removed between 90 and 100 per cent of ascaris in controlled cases. In this study hexylresorcinol in hard gelatin capsules was used. The drug deteriorates in a short time when stored in this manner. In 1931 Brown treated 650 cases of ascariasis, using sugar-coated pills containing 0.2 gram of crystalline hexylresorcinol. The drug was given in doses of 0.1 gram for each year of life up to 10 years. One gram was given to patients 10 years of age and over. It was found by following this method that 90 per cent of the worms were removed with one treatment. By giving two doses three weeks apart the worm burden was reduced 96 per cent and 93 per cent of the individuals were relieved of all the worms.

In preparing the patient no preliminary



INCIDENCE OF ASCARIS IN TENNESSEE
1929-1931

purgative is necessary the night before treatment. It is important that no breakfast be allowed the morning the drug is to be given. It has been found that if food, especially protein, is taken before or immediately after hexylresorcinol is given, the anthelmintic effects are markedly reduced. It is necessary to control this factor if good results with hexylresorcinol are to be obtained. After the drug is given food should not be taken for at least 4 to 5 hours. Individuals taking hexylresorcinol as an anthelmintic can continue with their usual occupation as it has been found that no symptoms arise which would necessitate discontinuing routine work. No purgative is given until 24 hours after the anthelmintic is taken, when magnesium sulphate should be administered. These workers suggest that the pills be swallowed and not broken up in the mouth because of the mild superficial erosions of the buccal mucosa which may be produced. This is more likely to occur in young children. It has been their experience that if these lesions occur they heal very rapidly and leave no scar formation.

Reports from foreign countries confirm the findings of Lamson and his associates. The indications are that this is the safest and most effective ascaricide that has been developed. It has also been shown that hexylresorcinol is effective in cases of hookworm when the above regime and precautions are observed.

PREVENTION

In discussing the prevention of ascaris, the manner by which ascaris is taken into the body should be kept in mind. The use by all members of a family of approved methods of disposal of human excreta is of primary importance. It has been shown that under good sanitary conditions where the possibility of reinfection is excluded, ascaris infestation will disappear in a few months without the use of anthelmintics. The instruction of individuals in the use of good personal hygiene is also necessary. Anthelmintics should be given to relieve the patient of the worm burden and to avoid the possibility of acute surgical conditions, but this will not prevent reinfection. Physicians in treating ascariasis can make a contribution toward the prevention of this condition if they will reinforce their efforts toward the cure of patients by advocating the proper disposal of excreta and good personal hygiene.

These slides show a map of the State of Tennessee with the incidence of ascariasis in the various counties. One can see that the incidence of this parasite varies greatly over the state. In West Tennessee the incidence of ascariasis is just over 3 per cent, in Middle Tennessee over 27 per cent, and as one approaches East Tennessee and the mountainous areas of the state the incidence of ascariasis increases greatly. In some areas the incidence is well over 50 per cent in certain counties.

(Slide) This shows the fertilized and unfertilized Ascaris eggs. This is the only intestinal parasite with which I am familiar that has an unfertilized egg. It has been shown recently that approximately 26 per cent of specimens studied contained unfertilized eggs alone. If one is not familiar with the appearance of the unfertilized eggs the diagnosis will be missed. You notice how difficult some of these would be to identify. Microscopists should become familiar with the appearance of these unfertilized eggs as they appear in the feces.

(Slide) I show this slide simply to demonstrate the blood findings in the cases of ascariasis that were studied clinically. You notice there is no disturbance in the red blood cell count, the white blood cell count or the hemoglobin. There is, however, an eosinophilia, an average increase of 8.9 per cent in the white cases and 5.3 in the colored cases, with an average of 2.9 per cent in each set of controls. Therefore, eosinophilia may be associated with ascariasis. It is not constant, however, and has no relationship to the number of worms present. The eosinophilia will give some idea as to whether or not the intestinal parasites are present.

(Slide) This is of interest not from the standpoint of diagnosis, but from the standpoint of showing that by taking roentgenograms of the intestinal tract following the ingestion of barium, it is possible to visualize the Ascaris worms in the intestinal tract. This was a boy 12 years old, brought into the emergency service of the hospital with symptoms which appeared to be similar to those of intestinal obstruction. Immediately after he was received in the emergency room he vomited a female Ascaris. He was not operated upon, but treated for his ascariasis. He was given barium by mouth, and this represents a film taken immediately after ingestion of barium. One can see that this is probably the duodenum and the upper jejunum. You see the long streaks which represent barium which has been displaced by the worms in the small intestine.

(Slide) This is another roentgenogram of the same patient taken four or five hours later. You can still see the streaks. (Applause.)

DISCUSSION

DR. F. L. ROBERTS (Trenton): Dr. Keller has covered this subject so thoroughly that he has left very little to be said, but there is just one point I want to stress, and that is the importance of doing stool examinations on all children with indefinite abdominal complaints or with indefinite respiratory complaints, or with anemia, with disturbed sleep and capricious appetite. Those are things that should put one on guard for doing stool examinations if they are not done as a matter of routine. Anemia is by no means the general concomitant of infection with the ascaris, as Dr. Keller has pointed out, but there are cases in which this parasite can cause a profound anemia. We had one child in Gibson County that was sent to a local hospital here in Memphis, where a diagnosis of pernicious anemia was made and a transfusion was given, and the child later returned for a second transfusion, became very anemic, and upon third admission to the hospital Dr. Arthur Cooper, of Memphis, saw her and ordered a stool examination. After the ascarides were removed, her pernicious anemia was cured. So you see in some cases these parasites can give a very profound anemia.

It will be noted, of course, that in West Tennessee the infection with these worms is very low. As Dr. Keller said, it is due not to the character of the soil, but to some extent to the topography of the soil. This country is rather flat, and there is no place to hide behind a house or a rock, as in East Tennessee, and the children, if they defecate, go to a toilet which is some distance from the house, and the feces are concentrated in that one place and are not deposited in the chimney corners, under the house, behind rocks, and in the front yard. I think that is the reason in this part of the country there is not a higher infestation with these parasites.

Of course, in this part of the country we have no hookworm such as they have in East Tennessee; but that, of course, is due to the type of soil rather than the topography.

I enjoyed the paper very much. The only thing that I should like to stress is that it is necessary to do more stool examinations on children than are done because not only will you find ascaris, but other conditions that sometimes will enable you to put your finger upon the correct diagnosis.

DR. JOHN L. JELKS (Memphis): I am glad you gentlemen left out Shelby County from the infestation area. We seldom find a hookworm here; we do find an ascaris occasionally. Dr. McIntosh claims that he finds a pinworm in about one-tenth of all of the appendices that are removed in St. Joseph's Hospital for any cause, many of them removed while performing other operations, for, as you know, the appendix is a thing we all like to get rid of, even though the appendix was not the thing originally gone after.

The Doctor mentioned the blood picture. I want to call your attention to one thing he did not mention, yet he had forty-odd per cent lymphocyte increase. I should like to know if he thinks that is normal. It doesn't appear so to me, and I find that always the case in all such infestations.

As to the toxicity of certain drugs, I used the hexylresorcinol solution the other day—four ounces—and I got considerable toxicity from it. I threw a young woman into a violent cataleptic state once by the injection into her duodenum of eight drops of oil of chenopodium in four ounces, I think it was, of sweetened water, and she was pale around the gills and mighty weak for about four hours in my office.

I want to call your attention to something that has gone into the lay press. This I saw in an article by Dr. Gus Evans, a fellow we all love. I think we ought to call attention to the dangers of putting into the lay press the safety with which we may prescribe an arsenical such as carbarzone. I had at that time used it in about fifty cases, and out of the fifty I had gotten five cases of toxicity, and one of them was mighty sick; I was uneasy about him. If you advertise the harmlessness and the efficacy of those things in the lay press (not alone that, but also oil of chenopodium), some layman who today in violation of good judgment can go to any drug store and buy anything in that drug store, will suffer for it. It reminds me of the negro baptizing. A negro who stuttered got pretty close to the water, and the negro preacher pulled him in, soused him under, and said, "That's all right." He couldn't say a word, but finally when he got out and some of the good brothers and sisters gathered around and said, "How do you feel now, brother?" he said, "Ah fee's like a damned fool. Some white man's gwina lose his nigger wid dis damned foolishness yit."

DR. HORTON CASPARIS (Nashville): There is one thing that Dr. Keller's paper brings out very clearly, and that is that we have a definite and an efficient means through microscopic examination of the stools of determining whether or not a child harbors intestinal parasites. In spite of this, we still see children who are treated for worms merely because they look wormy. In fact, I have seen several children who were shown not to have worms who had been repeatedly treated for worms merely because they gave that appearance; and the more they were treated, the wormier they looked. I hope all of us will take advantage of the means we have for making definite diagnosis and not unnecessarily subject children to anthelminic treatment.

In connection with the symptoms and signs produced by ascaris infestation, I had occasion to take rather careful histories and do rather careful examinations on sixty-five of these heavily infested children about whom Dr. Keller has been talking, and about the only symptom we are able to attribute definitely to the presence of ascaris infestation was abdominal discomfort and restlessness during sleep. Frequent manifestations of restlessness at night were grinding of the teeth, nightmares, and rolling and tossing. The symptoms are probably due to the moving around of the worms, for in a few cases I have seen these symptoms disappear following the removal of the worms. In regard to convulsions which have so often been attributed to the presence of worms, only two of these sixty-five children had convulsions. One of them was a microcephalic child whose convulsions were probably associated with that condition. Since convulsions in children are so commonly associated with conditions that produce high fever, and since worms become quite restless during high fever, often crawling out of the orifices of the body, it seems to me quite likely that the appearance of worms under those circumstances probably explains the old idea that worms caused convulsions. In the cases of intestinal obstruction from worms which Dr. Keller mentioned, associated convulsions could be indirectly attributed to the presence of worms.

DR. A. E. KELLER (Nashville): In regard to the anemia that Dr. Roberts cited, occasionally cases will be reported in the literature in which extreme anemias are found in association with ascaris. It has been shown that extracts of the various tissues of the ascaris worm contain hemolytic substances. The body fluids of the ascaris worm contain hemolytic substances. But anemia is so unusual in the ordinary, average case of ascariasis that we do not say that that is an important finding. However, it is well in cases of anemia in children to examine the feces for the presence of intestinal parasites.

We have examined about 700 people in Shelby County. We found an extremely low percentage of hookworm and some ascariasis, but not nearly so much as we found in the other sections of the State.

I should like to answer the question that Dr. Jelks asked about the lymphocyte increase in the blood findings that I reported. If you will bear in mind that we were dealing with children, and in children it is not uncommon to get an increase in the lymphocytes, I think that will answer the question. I personally do not think that there is an increase in the lymphocyte count in children with ascariasis. It is due to the age factor entirely.

I also would like, in closing, to mention one thing in regard to hexylresorcinol. The reason hexylresorcinol is given in crystals is because we do not wish those crystals to be absorbed into the blood stream and excreted through the urine. We wish to hold the hexylresorcinol in the intestinal tract so that it comes in contact with the parasites. It is only under those conditions that you get good results with hexylresorcinol. If you give it in olive oil, it will be absorbed into the blood stream and excreted through the urine. Therefore, it is always well when using hexylresorcinol as an onthelmintic to give it in crystals so that it comes in contact with the actual parasite in the intestinal tract and will not be absorbed.

The results from the field work that has been done with hexylresorcinol are encouraging. I simply report the results that have been obtained with the use of it by Dr. Lamson and his associates.

BIBLIOGRAPHY

Koino, S.—Experimental Infections on Human Body with Ascarides. Japan Medical World, 1922, 2:317.

Keller, A. E.; Leathers, W. S.; and Bishop, E. L.—A State-Wide Study of the Human Intestinal Helminths in Tennessee. Journal of Preventive Medicine (in press).

Otto, G. F.; Cort, W. W.; and Keller, A. E.—Environmental Studies of Families in Tennessee Infested with Ascaris, Trichuris and Hookworm. The American Journal of Hygiene, 1931, 14: 156-193.

Keller, A. E.; Casparis, Horton; and Leathers, W. S.—A Clinical Study of Ascariasis. Journal of American Medical Association, 1931, 97:302-306.

Sollman, Torald.—A Manual of Pharmacology. Third Edition. Pages 242-244.

Chopra, R. N., and Chandler, A. C.—Anthelmintics and Their Uses. Pages 135-149, 161-170.

Lamson, Paul D.; Ward, Charlotte B.; and Brown, Harold W.—An Effective Ascaricide-Hexylresorcinol. Proceedings of the Society for Experimental Biology and Medicine, 1930, 27:1017-1920.

Lamson, P. D.; Caldwell, E. L.; Brown, H. W.; and Ward, C. B.—A Comparison of the Anthelmintic Properties of Hexylresorcinol and Heptylresorcinol. American Journal of Hygiene, 15:306-314, 1932.

Lamson, P. D.; Brown, H. W.; Robbins, B. H.; and Ward, C. B.—Field Treatments of Ascariasis, Ancylostomiasis, and Trichuriasis with Hexylresorcinol. American Journal of Hygiene, 1931, 13:803-822.

Lamson, P. D.; Minot, A. S.; and Robbins, B. H.—The Prevention and Treatment of Carbon Tetrachloride Intoxication. Journal of American Medical Association, 1928, 90:345-349.

Brown, H. W.—The Treatment of Ascariasis and Trichuriasis with Hexylresorcinol Pills. American Journal of Hygiene (in press).

Lamson, P. D.; Brown, H. W.; Ward, C. B.; and Robbins, B. H.—Hexylresorcinol in the Treatment of Hookworm Disease. Proceedings of the Society for Experimental Biology and Medicine, 1930, 28:191-193.

Keller, A. E.—Ascaris Lumbricoides, Loss of Infestation Without Treatment. Journal of American Medical Association, 1931, 97:1299-1300.

THE RELATIONSHIP OF NEPHRITIS, HYPERTENSION AND HEART DISEASE*

William R. Cate, M.D., Nashville

THERE is no problem facing the medical profession today that demands more urgent and immediate attention than the steadily rising death rate from heart disease. In its various phases it causes more deaths than any other single condition. It has been estimated that one out of five persons reaching the age of ten eventually succumbs to heart disease.

In 1924 the movement to combat the increasing ravages of heart disease became a national one with the formation of the American Heart Association. Interest in the subject is widespread, and an intensive study of the entire subject is being made in many medical centers here and abroad.

It is obvious that research into any phase of the cardiac problem will be either in the line of establishing etiological factors responsible for the type of heart disease under consideration or to perfect the remedial measures available, to the end that the cardiac cripple may be given the greatest measure of relief possible. Each offers a virgin field for well-directed research and careful clinical observations, that the yearly increases in heart disease may be checked and the span of life of those already afflicted be lengthened and their lot made easier and happier.

There are three great classes of heart diseases—namely, rheumatic, syphilitic, and hypertensive—with other important though numerically less frequent groups, such as thyrotoxic heart, congenital heart defects, functional cardiac disturbances, subacute bacterial endocarditis, etc. For the discussion at this time one problem has been selected dealing with the group of hypertensive diseases—namely, the Relationship of Nephritis, Hypertension and Heart Disease. It is not the intent to enter into a discussion of the relationship of nephritis to hypertension and heart disease from an etiological standpoint. Such a presentation would require the careful correlation of large numbers of clinical and necropsy records extending over a period of years. Rather the subject is to be approached from the standpoint of the therapeutics involved; to call the attention of the medical profession again to the fact that in only a small per cent of patients is high blood pressure nephritic in origin (estimated by Dr. Paul White at approximately 5 per cent), and that only a small number of the remaining 95 per cent ever exhibit renal pathology that can be detected by the usual tests. Every case falling in the category of the cardiovascular renal group should be carefully analyzed to determine as accurately as possible the rôle played by each part of this triple alliance, to the end that measures instituted may be expected to benefit, and not injure, the one under treatment.

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*Read before the Tennessee State Medical Association, Memphis, April 12, 13, 14, 1932.

In the minds of the laity, high blood pressure and kidney disease are synonymous; and to judge by the dietary and other restrictions imposed by the medical attendant in the majority of cases, the profession in practice agrees with this belief. There is no more pathetic picture than the thin, hungry, weak hypertensive patient that in the course of months has had eggs, milk, meat, sweets and bread deleted from the diet, and the little food allowed given a non-stop ticket by a daily or weekly dose of magnesium sulphate. Would it not be better at the outset to determine the digestive capabilities of such patients, carefully work out the eliminative powers of the kidneys, estimate the food requirements of the patient in terms of his daily activities, and give him any food he desires so long as his renal functions are unimpaired and sufficient teeth have escaped conviction to enable him to masticate his food.

Further discussion of the hypertensive diseases will be carried forward in two divisions—in Group I, those cases of hypertension without renal impairment; and in Group II, those cases of hypertension with renal impairment.

Group I.—Cases of Hypertension without renal impairment.

The existence of such a group is denied by many investigators and affirmed by others. The opinion is widespread that hypertension is invariably the result of renal disease. There are clinicians and pathologists of wide experience who claim never to have seen an instance of protracted hypertension in which postmortem examination did not show diseased kidneys. More recently, however, there is a decided reaction against this position, and some investigators have gone so far as to state that renal disease in itself never causes hypertension. That hypertension may develop in the wake of glomerulonephritis, urinary obstructions, polycystic disease, and a few other rare conditions, however, is definitely established. Such hypertension has been termed renal hypertension, and comprises less than ten per cent of all cases of elevated blood pressure.

The remaining ninety odd per cent has been shown just as conclusively not to result from disease of the kidneys; in fact, the great majority of such cases go through life without ever giving evidence of renal impairment. In his recent book, "Hypertension and Nephritis," Fishberg says (page 188): "Such non-renal hypertension—and it is more common than renal hypertension—is generally known as essential hypertension. In essential hypertension the patient may show no evidence of renal disease for years; in fact, the large majority of patients with essential hypertension run the full course of their disease to the fatal termination without ever suffering from renal insufficiency."

Notwithstanding countless investigations and a considerable number of facts revealed by them, we are yet very much in the dark as regards the causation of essential hypertension. It is clearly not always of the same etiology. Among the more important causative factors may be mentioned constitutional, familial, or hereditary tendencies, causing the so-called constitutional hypertension. Most individuals with the classical picture of essential hypertension suffer from this constitutional predisposition. In a family now under observation the father and two sons have died as a result of hypertensive heart disease, and the only surviving son carries a pressure of above 200.

In another group of cases the hypertension is the result of dysfunction of the endocrine glands. Age is an important predisposing factor.

There is little, if any, evidence that tobacco, alcohol, or intestinal auto-intoxication play any part in its production. Syphilis and focal infections, advanced by many as causative factors, have been discarded in recent years. The extraction of teeth, removal of tonsils, drainage of sinuses, colonic irrigations, are beautiful in theory, but woefully lacking in therapeutic results. The last state of one so mutilated is worse than the first.

There are also certain accessory factors in the causation of essential hypertension which, though they do not initiate the trouble, definitely aggravate the condition. The most probable of such contributary causes are emotional and other psychic strains, overeating, and obesity. How they act is not known.

The absence of kidney abnormality as a basis of hypertension in these essential cases is based in part on the following observations: The absence of albumin in the urine, or the presence of only a trace; no casts or red blood cells; normal variations in the specific gravity when two-hour specimens are tested throughout the twenty-four; normal P. S. P. elimination, and normal N. P. N. in the blood. Usually these patients are up only once or twice at night, the relative proportion of the day and night specimens remaining the same, nor is the total twenty-four-hour amount much, if any, increased. Any one, or all, of these observations may be radically changed if the first examination is made during or soon after a period of heart failure. In such cases the heart should be given sufficient time to compensate and all signs of congestion in the kidneys clear up before passing finally on the kidneys.

It is of more than theoretical interest to know whether a given case is one of renal or non-renal origin. For instance, if renal in origin, the kind of food the patient eats is of importance; if non-renal, it is not so much the kind of food taken, but the amount, and the withdrawal of meat, eggs, milk, bread, etc., is uncalled for—in fact, may be positively injurious. A patient under treatment during the past three years for hypertension, of non-renal origin as determined by various tests, had been going along nicely on a limited but general diet until she went in January, 1931, to a certain mineral springs known for relieving high blood pressure. Here she was taken off of all food for twenty-six days and given the juice of eighteen oranges daily, and kept in bed most of the day. At the end of the period of fasting she was put on a diet of stewed fruit and a limited number of vegetables, with no milk, eggs, or meat, and no bread. After a stay of six weeks she returned to Nashville, where she was seen five days after her return. At that time her systolic pressure was 235, and she was weak and irritable from undernourishment, and had lost faith in the medical profession in general to give her relief. Such treatment could result in nothing but harm to a case of essential, or non-renal, hypertension.

What such patients need is to be taught a philosophy of life—how to accept a handicap and be happy in spite of it, how to eat moderately of any food they like, and to be temperate in all things. The adult body requires one-half to three-quarters of a gram of protein per kilogram of body weight, and to withhold protein from these patients is to invite a state of nitrogen unbalance, which in itself may be a cause of serious trouble.

Going hand in hand with the essential hypertension, and an extremely important part of the picture, is the cardiac hypertrophy. Ninety per cent of the cases eventually succumb to cardiac decompensation or a fatal brain accident. In ten per cent of the cases late renal lesions may supervene and becloud the final issue. However, the finding of albumin, and a few red cells and casts, in the urine in the late stages of essential hypertension does not in itself indicate definite kidney pathology. It may be the result of passive congestion from a failing circulation.

Proper management of these cardiac cripples will include a careful regulation of the activities engaged in. Much can be done to prolong the period of cardiac compensation and put off the evil days of failure by proper regulation of the kind and degree of physical exercise permitted. At the same time all factors responsible for the development of the original hypertension should be constantly studied and reviewed, to the end that at some future date this distressing condition, which snuffs out so many lives in their prime, may be understood and the continued increase in the number of cases checked.

We turn now to the counterpart of the group just discussed—namely, those cases of hypertension *with* renal impairment, the so-called cardio - vascular - renal syndrome. At the outset it should be stated that in the early years of this second group they are differentiated with difficulty from the group of non-renal cases just discussed. For years the renal changes may be so slight as to be missed by ordinary tests of renal function. Until late in the disease there may be no nitrogen retention in the blood, a normal P. S. P. output, no albumen or casts in the urine, and no changes in the specific gravity. This type of case is well illustrated by a young woman, age thirty-two, who came in recently complaining of shortness of breath and easy fatigability. She gave a history of having a prolonged attack of kidney trouble, with general edema, following a spell of scarlet fever at the age of nine. She was in bed three months, and out of school one year because of poor health. However, since then the general health has been excellent until about three months ago, when she began to tire more easily than usual, and noticed a gradually increasing shortness of breath on exertion. The blood pressure was 165/90. Repeated studies of the urine have failed to reveal any evidence of renal impairment, though there is a well-advanced generalized arteriosclerosis. With the past history of an acute attack of glomerulonephritis, though the urine is negative at this time, we feel that this is an example of renal hypertension, and that sooner or later the renal factor will evidence itself and eventually be the cause of death. In this case, avoidance of an excess of salt in the diet, proteins limited to the actual body need, omission of alcohol, tobacco in limited amounts only, and other regulatory measures, with the careful elimination of focal infections, will do much in relieving the damaged kidneys and postponing the day of renal decompensation, though the blood pressure may be lowered little, if any at all.

It will be necessary in some instances to take a case out of the group of non-renal hypertensions and later put it in the renal group. But the more closely these cases are observed, the sooner will a correct diagnosis be made and proper treatment instituted.

There are two main groups of cases falling within the classification of renal hypertension. First, chronic glomerulo nephritis; and, second, renal arteriosclerosis. At certain stages of these diseases it is not always possible to distinguish them. Chronic glomerulo nephritis is always preceded by an attack of acute glomerulonephritis, though the original attack may have been overlooked or masked by the acute symptoms of the illness during which it occurs. Between the acute and chronic stages there is a period of months, at times years, when all signs of renal impairment disappear, though the hypertension persists. Renal arteriosclerosis is not preceded by a previous attack of renal pathology, but is a gradual development upon the basis of sclerosis of the glomerular arterioles. In the early stages of this process there are no clinical or laboratory signs of impaired renal function. Therefore, it is often difficult or impossible to differentiate between the second stage of chronic glomerulonephritis and the early stage of renal arteriosclerosis. Pathologically, these two groups are entirely distinct processes, and later can be clearly recognized clinically and by laboratory studies.

The more important differences between the two groups of cases may be summarized as follows: Patients with—

Chronic Glomerulonephritis	*Renal Arteriosclerosis*
1. Previous attack of acute nephritis.	1. No previous attack.
2. Usually begins before fourth decade.	2. Begins after fourth decade.
3. Four plus albuminuria.	3. Trace to one plus.
4. Normal specific gravity.	4. Fixation at low level.
5. Decrease in volume of urine.	5. Increased volume.
6. Anemia and pallor marked.	6. Ruddy countenance.
7. Edema often extreme.	7. Edema, rarely marked.

Death in these two groups is often uremic, but may be cardiac, or a combination of the two.

A most striking case of chronic, or subchronic, glomerulonephritis was seen last April in a girl of sixteen, white, who had always been in excellent health except for an attack of scarlet fever in 1928. She played in a basketball tournament the middle of March, with no sense of disability other than some swelling of the feet and legs in the afternoon, which was attributed to the strenuous exercise of the tournament. About April first she noticed her vision was becoming dim, and consulted an oculist for the failure of vision. The oculist noted a diffused retinitis, and referred her for general examination. Although the child was only sixteen, she had a nephritic picture of sixty. The blood pressure was 238/140 on first examination, and 220/130 after a week in the hospital. The heart was greatly enlarged, giving evidence of the long existence of the hypertension and nephritis. There was a four plus albuminuria, an occasional granular cast, no red or white cells. Specific gravity, 1022; N. P. N., 38. Twenty-four hour urine output, 1350 c.c., and a severe grade of anemia. There was pendent edema to the thighs.

In recounting this case of chronic glomerulonephritis, the age of the patient (sixteen), the heavy albuminuria, normal specific gravity, and normal or diminished twenty-four-hour urine output, marked anemia, and pallor, are to be noted. On the other hand, renal arteriosclerosis never occurs before the fourth decade. Albuminuria is never extreme, the specific gravity is usually fixed at a low level, and the twenty-four-hour urine output increased, and there is usually a ruddy, polycythenic appearance rather than anemia and pallor.

An instance of renal arteriosclerosis with hypertension, which is often confused with the type of case just cited, is that of a white male, age forty-seven, with a daily pressure averaging 220/140.

The urine in this case contains an occasional hyaline cast, no red or white cells, and a two plus albuminuria. It is to be observed that the albuminuria is out of proportion to the severity of the other symptoms, being less than that observed in the case of glomerulonephritis cited above.

A concentration test was run on this patient, yielding striking evidence of the advanced degree of destruction of the kidneys. The twenty-four-hour urine output was collected at two-hour intervals, from 8 A.M. to 8 P.M., and from 8 P.M. to 8 A.M. The total day output was 1905 c.c. and the total night output was 1050 c.c. The specific gravity readings were 1006, 1006, 1008, 1006, 1006, 1005, 1002; the highest reading being 1008; the lowest, 1002. Normal kidneys on a test of this kind should show a variation of 1030 to 1014. It is noted also that with such marked evidence of renal damage, the blood N. P. N. was 35, well within normal limits, and only one plus albumin in the urine.

It is in this type of case that determination of the specific gravity of specimens throughout the day is of prime importance. As the renal impairment progresses, the ability to concentrate the urine, which indicates the amount of reserve power of the kidneys, diminishes, until in the latter stages there is little variation in the different specimens. It is necessary to put out large quantities of dilute urine at a constant rate throughout the twenty-four hours in order to eliminate the products of protein metabolism. Therefore, the day and night amounts tend to become equal, with increasing nocturia and a fixed specific gravity. This process of reduction of specific gravity goes on for years, or until the total functioning kidney substance is reduced to one-fourth or one-fifth of the normal kidney substance.

Further progress of the renal impairment results in retention of the products of protein metabolism, with the development of uremia. At any time during the course of illness, if the circulation fails, thus impairing renal function, uremia may develop immediately.

In this hypertensive group, associated with renal impairment, the final outcome may be either cardiac or uremic, or both combined. The same care in protecting the heart should be observed here as in the nonrenal hypertensive group, and in addition diet here becomes of vital importance. Proteins in the diet should be limited to one-half gram per kilogram of body weight, which is the minimal amount the body needs to maintain nitrogen balance. Salt should be restricted in the diet and an excess of water prohibited. It is well in every such case to determine accurately the twenty-four-hour urine output, add 20 per cent for elimination by skin, lungs, and bowels, and rigidly restrict the intake to this amount. This is especially true where there is edema. If edema is marked, it may be wise to withhold water entirely for twelve hours. This is rarely necessary, and often leads to serious consequences. In the face of edema, one is often surprised to see the edema rapidly disappear on an increased water intake.

It is impossible in a paper of this kind to take up a discussion of the detailed management of the different groups of cases, but if we recognize that there are different kinds of hypertensive cases, then it is not a matter of great difficulty to determine the correct management for the individual case.

Briefly summarizing, then, the essential facts contained in this discussion, they are as follows:

Heart diseases are definitely on the increase, ranking first as a cause of death throughout the United States. The hypertensive diseases constituted the largest single group of cases met with. The hypertension is in most instances of non-renal origin, the so-called essential hypertensions, and a lesser group, of renal origin. The etiological factors concerned in the production of the hypertension of the non-renal group are unknown, but there is a strong hereditary factor involved, with accessary factors of lesser importance. Death in this group is cardiac in ninety per cent of the cases, and cardio-renal in ten per cent. A careful study of each case is necessary to differentiate it from the second group of hypertensions of renal origin. At times such differentiation is impossible, but the more carefully the cases are studied the more often such a distinction is possible.

The cases of renal hypertension are of two classes — first, those due to chronic glomerulonephritis, always secondary to previous recognized or unrecognized acute glomerulonephritis; the second, renal arteriosclerosis, dependent upon sclerosis of the glomerular arterioles. The one is inflammatory in origin, the other non-inflammatory. Careful analysis of these cases will usually suffice to differentiate between the two conditions.

The relationship of the kidneys to the hypertension should be accurately determined, to the end that unnecessary interference with dietary habits may be avoided.

DISCUSSION

DR. J. B. McELROY (Memphis): I feel quite sure that there are no accurate statistics, particularly in this country, with reference to the incidence of heart disease. Hence the importance of a paper like this.

In trying to classify the different types of hypertension, I have come to the conclusion that there are four different types, and it is necessary, in order to determine not only the incidence of the disease, but the proper treatment of the disease, to make the proper diagnosis in these cases. Formerly in the diagnosis of heart disease a great deal of stress was laid upon the anatomical lesion and much was said about valvular defects. A short time after that the pendulum swung probably too far, and the functional capacity of the heart was taken more into account. But more recently, in the last decade, particularly under the stimulus of Dr. Cabot, we have tried also to determine an etiological diagnosis, and the diagnosis of every heart disease should, if possible, include an etiologic, anatomic, and functional diagnosis. This pertains particularly with reference to the hypertensive heart diseases.

It is my impression that they occur in this country in the following order of frequency: hypertensive, syphilitic, and rheumatic.

Inasmuch as the Doctor has confined his discussion to hypertensive heart diseases, it is important, I think, always to come as nearly as possible to the etiologic, anatomic, and functional diagnosis. I am not in accord with Dr. White with respect to nephritic hypertensions, because I think that these occur more frequently than is indicated in his book. Of the fifty cases which I studied a few years ago, there were seventeen of some type of nephritis, there were about nine of essential hypertension, and I do not use essential hypertension in the sense that it is usually used in the literature of today. I think we should confine that term to what Frank first meant by it, and that is a hypertension which is due to a functional hypertonus of the small blood vessels of the body without any anatomical involvement of the small blood vessels either in the kidney or elsewhere. We see these cases occurring under a variety of conditions—in localized cerebral arteriosclerosis, in Basedow's disease, in lead poisoning, in the menopause, associated with toxic conditions. When we make a diagnosis of essential hypertension, we ought to come as nearly as possible to the etiological factor. There were nineteen cases of arteriolo-sclerotic and three cases of malignant hypertension. Every hypertension carries as a necessary corollary a hypertrophy and dilatation of the heart and the possibility of myocardial insufficiency and cardiac failure.

When we come to the nephritic hypertension, we should say that there is an acute nephritis or an acute diffuse glomerular nephritis with myocardial insufficieny, and there is one place where I think we overlook our hand very frequently. Nearly all of the cases, at least the great majority of cases, of acute nephritis that die, die from myocardial insufficiency.

Then there are, as a second group, the chronic diffuse glomerular nephritis cases without insufficiency, and in fifty per cent of these cases we will find evidence of myocardial insufficiency.

Right here I may take occasion to say that there is one etiological factor usually involved in these cases, and there is no condition which predisposes to arteriolosclerosis or to sclerosis of the small arterioles more than nephritis. That is emphasized in the first case the Doctor reported this afternoon, which was evidently at first an acute diffuse glomerular nephritis which developed into a chronic glomerular nephritis without kidney insufficiency, and superimposed upon that was an arteriolar contracted kidney.

The next group of cases we have is the chronic diffuse glomerular nephritis in the end stage, associated with kidney insufficiency, and they are frequently also associated with myocardial insufficiency.

There is a great deal of discussion about the arteriolosclerotic kidney. As the Doctor has told you, there are some good authorities—for example, Romberg in Germany, Widal in France—who contended that all cases of hypertension were renal in origin, but we now know that that is not so. I think that Professor Volhard has advanced our knowledge very materially with respect to the nature of these conditions when he lays stress upon the mechanism of these two different types of hypertension. He has been able to show that in the nephritic hypertensions and the malignant hypertensions, by which we mean an arteriolosclerosis of the kidney associated with impaired renal function, not only is there an arteriolosclerosis in the pathology of the kidney, but there is an arteriolonecrosis with arteriolitis; there is a vaso-active substance which acts upon the small blood vessels to produce a contraction and hypertrophy of these arterioles, which he speaks of as pale hypertension. This substance can be demonstrated biologically. Where this vaso-active substance comes from and what it is, we do not know, nor does he know; but I think that our knowledge with respect to the types and nature of these hypertensions is very materially advanced by this knowledge.

The red hypertension of which he speaks, in which we classify the essential hypertension without any anatomical lesion and the arteriolosclerotic kidney, is still enshrouded in darkness.

It is necessary, in order to classify these various types of heart diseases, as the Doctor has very nicely indicated, to make this diagnosis in order to apply the proper kind of treatment. We must not conclude, because we cannot demonstrate any impairment of kidney function, that the condition is not renal in origin.

I should like to emphasize, for the benefit of the general practitioner, how he can tell the presence of impaired kidney function without the complicated methods of the laboratory. Any kidney which cannot concentrate is impaired, and you can get as much information from the observation of specific gravity as you can from the determinations of the non-protein nitrogen. It is true we use various functional tests. In our routine work we usually use three which are of advantage. The first and foremost is the concentration test. A patient, whether he drinks little or whether he drinks more, who puts out a urine of specific gravity of 1.010, has dangerously impaired kidney function. There are certain conditions that ought to be taken into consideration in the interpretation of the specific gravity, but in the absence of edema, the ordinary specimen which is passed will give you very much information with respect to the functional capacity of the kidney.

I think that our knowledge has been advanced considerably by van Slyke and his coworkers particularly in the determination of the urea clearance test. Just what that means I am not quite sure yet, but I am inclined to think that it gives us some information upon the amount of kidney destruction that is going on, and we know very well that fifty per cent of the kidney will be entirely destroyed before we can recognize it by any of our tests for renal function. You have a very good indicator in the component of the urea clearance test—the blood urea—as to the functional capacity of the remaining portion of the kidney, which may compensate for that which is destroyed.

There is no regular level for urea nitrogen which will indicate the onset of the uremia, but I think Becher has pretty conclusively proven that when the putrefactive products which take place in the intestines are not excreted by the kidney, we are pretty surely on the eve or in the presence of uremia, and that can be determined by the xanthoproteic test, which is very simple, and you can do it at the bedside.

Technique: Deproteinize blood with 20% trichloracetic acid in the proportion of 1:1. Add to 2 cc. of filtrate .5 cc. of concentrated nitric acid. Boil one-half minute. Cool under water tap. Add 1.5 cc. of 33% sodium hydroxide. The intensity of the yellow color indicates the intensity of the reaction. In normal serum or blood there is scarcely a yellow trace of color.

The treatment depends, just as the Doctor has very nicely indicated, upon your diagnosis. Just the other day we had a case that very beautifully illustrates the necessity of a complete diagnosis.

The history went along perfectly. First, the man had rheumatic heart disease, chronic cardiac valvular disease, mitral stenosis, and mitral insufficiency, auricular fibrillation, and then he got a peritosillar abscess and developed acute diffuse glomerulo-nephritis, and on top of that a lipoid nephrosis. So, you see, our diagnosis must include all of those things, and our treatment will depend largely upon the condition or the way we interpret the case.

In these cases of essential hypertension which are characterized by lability of the blood pressure (they may have myocardial insufficiency), much can be done in the way of psychotherapy and much can be done in the matter of rest and so on. These respond very well also to the so-called sedatives. I think our American literature has fallen into a mistake in thinking that all these cases are primarily essential hypertensions and develop into an arteriolosclerotic kidney. I think surely Th. Fahr is right about that—that frequently many of these are arteriolosclerotic kidneys at first; and when they are, we have a more fixed specific gravity without any impairment of the kidney function. The same thing is to be done; the kidneys and the heart are to be protected, but they are not to be made invalids. They must learn something of the philosophy of life; they must go slow, and they must be careful not to hurry and not to worry. I think it is not so much what these patients eat as that they should eat moderately so as to protect the heart and the kidneys. It doesn't make any difference whether they eat eggs or red meat or white meat or what not, if there is no impairment of the kidney function. It is necessary in such cases as the one Dr. Cate reported that they should have a proper amount of nutrition.

This brings up another question which is much under discussion. I formerly did not have much sympathy with Allen's idea of the salt-free diet in this type of hypertension, but I must confess that there is something in it. I don't think there is any doubt but that the salt should be very materially restricted in these cases, and particularly the water, unless there is an impending uremia and kidney insufficiency. You see there are contraindications in these various conditions. Sometimes, as the result of edema, water should be restricted; and, on the other hand, in impending uremia it should be increased. Then you will have to treat largely the condition which is the more serious.

On the whole, I think the Doctor has presented a very timely paper and one which is very well presented.

SHOULD CRIMINALS HAVE A PSYCHIATRIC EXAMINATION?*

H. B. BRACKIN, M.D., Central State Hospital, Nashville

IN ANSWER TO THE QUESTION, "Should Criminals Have a Psychiatric Examination," I want to answer emphatically yes, but I also want to state the type of examination I think they should have. There are many reasons why criminals should have a psychiatric examination, but the type of examination they receive in many states is bringing disrepute upon the psychiatrist. Not only a large per cent of the laity do not believe the psychiatrist when he testifies in court, but there is a large per cent of the medical profession who have specialized in other fields that do not believe us. The result is that when a psychiatric examination for a criminal is suggested immediately a large per cent of the people are prejudiced against the criminal because they think he is taking the insanity plea to escape punishment, and not because he is a sick man and needs treatment rather than punishment. Now a large per cent of criminals are sick people, and I think I can convince some of you of this fact from the series of cases which have been examined at the Central State Hospital since I have been first assistant there. The method of examining these cases and the number I will discuss later in the paper, but I want to ask you now what any or all of you would say should be done if a patient under your care that had typhoid or pneumonia should become delirious and commit some crime. Would you say he or she should be punished, probably electrocuted? No, you would not. You would say that he was not responsible on account of the high fever and physical pain, and that he should have more intensive treatment. Still many of you, as well as the laity, are ready to say that all criminals should be punished and that the psychiatrists are overdoing the examinations and running the thing in the ground, and that we think all crime is the result of mental disease. We do not think all crime is the result of mental disease, but we do believe and can prove that a large per cent of the criminals are sick mentally and should be treated and helped back to a healthy state of mind if possible, and if not, then segregated from society where they can have the benefit of treatment. They should not be put in prison for a short term and then released to commit another crime and again be sent to prison and this routine continue the rest of his or her life, taking up the time of the courts at a heavy cost to the taxpayers besides the damage to property and the personal injury to citizens.

Recently the newspapers have been full of an account of a person on trial for life with psychiatrists testifying on each side and the result was the jury did not even consider the expert testimony. Now I do not intend to offer an opinion as to whether this party was sick mentally or not, but I will say the method used in employing experts on each side and having them to testify against each other has helped to bring more disrepute upon our profession. Now my idea of the type of examination that should be done is the type that we do at the Central State Hospital.

In 1920 the Supreme Court of the State of Tennessee sent a man charged with murder to the Central State Hospital and asked the Superintendent, Dr. W. S. Farmer, and his staff to observe him as long as necessary and report their findings. When this man was tried there was expert testimony on each side and the jury gave no consideration to it and sentenced him to life, but the Supreme Court was not satisfied and ordered him observed over as long a period of time as necessary. Dr. Farmer and his staff reported to the Supreme Court that this man was a case of dementia præcox. The Supreme Court ordered him committed until he recovered, and then to be returned for trial. This is as you know the Tennessee statute, and there is no way of winning by pleading insanity even though a mistake should be made because the patient has to stand trial if he ever recovers. This man the Supreme Court sent to the Central State Hospital is now extremely deteriorated and is on the ward for the lowest type. That was the beginning of the work that the Central State Hospital is doing for the courts. Since that time the different courts in the state have followed the example and sent criminals, where the insanity plea is raised, to the Central State Hospital. There is no law forcing us to take them, and we will take them only provided the counsel for the defense, the attorney-general and the judge all agree to abide by our decision. We do not get any remuneration for our work and always say so in our report which we swear to before a notary and send a copy to the judge, attorney-general and attorney for the defense. We observe these patients as long as necessary in order that the staff may all agree. Sometimes we observe them a month and sometimes four or five months, but we always agree before making the report. The result is that both sides practically always accept our report without calling us into court to testify. If we report they are insane, then our report is read to the jury and no further testimony is presented, and the jury finds them insane and they are ordered to the Central State Hospital until they recover, but if they are not insane then they are tried for their crime. It is surprising the time and money that is saved by this procedure, as well as seeing that the mentally sick are treated. We have had several cases that have been sent to us by the Supreme Court after their cases had been in court a long time and several trials with a large number of people losing time from work, as well as the cost of several attorneys on each side. One of these cases cost the state several thousand dollars, as well as costing the patient's family thirty thousand dollars and leaving them paupers, while he eventually landed in the hospital for the insane where he could have been sent with very little cost to the taxpayers or his family if the proper procedure had been carried out.

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I will now give you a summary of the work that we have done for the courts since January, 1928. We have received one hundred and twenty criminals for observation. These cases were sent to us by order of the criminal judge or supreme judge by agreement of counsel on both sides when the insanity plea was made. The crimes committed by these patients were as follows: murder, thirty-five; attempt to murder, fourteen; larceny, eighteen; forgery, fourteen; robbery, twelve; felonies, nine; arson, four; bad checks, four; rape, two; assault with intent to rape, three; embezzlement, one; non-support of children, two; assault, two; carnal knowledge of female under twelve, one; and sexual relations with a mare, one. We made a complete mental and physical examination and did all the laboratory work indicated on each patient. I observed each patient twice a day and other members of the staff including the superintendent observed each patient every few days. We had them watched closely night and day by trained attendants who reported to me their behavior. Each patient was brought before our staff several times for an examination by each member. We continued bringing them before the staff until we all agreed as to their mental status. We found there were thirty cases normal mentally among the one hundred and twenty criminals. The remainder was divided as follows: dementia præcox, twenty-seven; psychopathic personality, twenty-two; feeble-minded, twelve; psychoses with mental deficiency, four; general paralysis, six; manic depressive psychoses, five; psychoses with cerebral arteriosclerosis, four; psychoses with epilepsy, four; senile psychoses, two, and one each of alcoholic psychoses; psychoneurosis, hysterical type; postencephalitis, Parkinson, syndrome, and psychoses, type undetermined.

I will now take up each type separately. First, there were thirty normal mentally and these patients were tried for their crime; if found guilty, were sent to prison. The kinds of crimes they committed were pretty equally divided among the various crimes committed.

There were twenty-seven cases of dementia præcox and fourteen of these committed murder and five attempted to murder. This shows that 70.37 per cent of the cases of dementia præcox committed murder or attempted it. These cases are usually insane for several years before they are recognized by the laity or the general practitioner and the above figures show it is one of the most dangerous types of mental trouble. It is due to the fact that so many of them have visual and auditory hallucinations and ideas of persecution. If a patient gets an idea he is being persecuted and he thinks he hears God tell him to kill the persecutor and this is due to a mental disease, should he be punished for fifteen or twenty years and turned out to commit a similar or worse crime or should he be treated until he recovers, and if not, held for life? Now one of these patients killed his wife with an axe while she slept, received fifteen years for it and got out in nine years. This was in Alabama. He then came to Nashville and married and six months from the time he got out of prison God told him to kill this wife with an axe while she slept, and he did so. We found him to be a dementia præcox and had probably been insane for fifteen years. Had routine mental examinations of criminals been made in Alabama then, the second life would have been saved.

There were twenty-two cases of psychopathic personality. These patients are not insane but they are abnormal, and the abnormality usually exists from an early age. These patients committed mostly forgery, larceny and robbery. There were seventeen out of the twenty-two committed one of the three. The defect in this type is along ethical and moral lines, and many of them are above the average intellectually but abnormal, and as there is no institution in the state for this type, they are sent to prison. They usually get a short term of one or two years due to the type of crime. The result is they are soon out and again commit the same crime because they are abnormal and cannot help it. Now it costs the taxpayers a lot of money to be continually trying this type of individual, besides the damage he does to personal property when he is out. They make up a large per cent of the recidivists in prison, and the recidivists in prison make up about sixty per cent of the prison population. Now what should be done with them? I think they should be given an indefinite sentence with it left to a commission whether they should ever be released or not. This commission should consist of psychiatrists, lawyers, penologists and social workers. Of course, we would have to have a new law before it could be done. There is one other solution to this type. It is to not deal with them in the above manner on the first offense, but wait until they become recidivists and give them life for the fourth offense regardless of the type crime. The Baum Law in New York state is this type of law. Now, I think a law of one or the other types above will reduce to a large extent the number of crimes in Tennessee and save much court cost. I understand from an authority at our state prison that at present there are seven hundred prisoners from other states and there are only a few over two thousand at the prison. He thinks it is due to other states passing the life term for the fourth offense and they come here to operate as they get short sentences. One of this number came to us under an alias and claimed to be a physician. We did a great deal of work on this case and finally found his statements as to graduating in medicine and practicing were not true, but did find out he had two Chiropractic degrees. We got no help from him, and he held out to the last he was a medical practitioner. We also found out he had been in jails or penitentiaries in seven states and in the Orient. He had been in three state hospitals and in St. Elizabeth, the government hospital in Washington, D. C. He was diagnosed a psychopath in every hospital, but he was smart and cunning and could feign insanity so well he could fool anyone not experienced in psychiatry. No doubt this man had been in many prisons that we did not find out about as he would not co-operate. When our report stated he was not insane the judge gave him two years on the county road as his crime was larceny. He is out and probably in prison elsewhere by this time. Now this man should have been put in an institution suitable to his needs for life, but since we have none, then the penitentiary. We got in communication with his aged parents in Texas and they asked us to try to have him sent to some institution for life for his own good and for the betterment of society. Now if we could get a law to have criminals examined mentally before trial and an indefinite sentence for psychopaths or a life sentence for fourth offenders it would be a great step forward.

There were twelve in this group found to be mentally deficient along educational lines. They did not develop normally, and therefore, could not learn in school. No type of crime especially predominated in this group. Some of these patients were sent to the Home for the Feeble-minded, but as Tennessee has none for negroes they had to be sent to prison. According to available statistics twenty to thirty per cent of inmates of penitentiaries are feeble-minded or abnormal. We found twelve feeble-minded; twenty-two psychopaths or feeble-minded along ethical and moral lines, which would be 28.33 per cent of the number examined. Now there were four cases feeble-minded but also had a psychoses, so those were sent to us.

There were six cases of general paralysis. Five of these committed forgery or larceny. This is exactly what we would expect. These patients frequently have grandiose ideas and think they own banks, various public buildings, etc., and do not think they are forging or stealing but merely taking what belongs to them. Many men that take money from banks and other businesses are cases of general paralysis. Many crimes that cannot be understood could be if the accused were examined mentally and a blood and spinal Wassermann were done. A blood Wassermann is not sufficient. We do a spinal Wassermann on every criminal we examine regardless of the crime or who the criminal is. One of this group had syphilis nine years ago and some treatment at the time, most of which was by mouth. He had been an honest, hard worker—but had gotten to drinking excessively, forged some checks and sold some property owned jointly and used the money. His blood Wassermann was negative but his spinal Wassermann was four plus and had an increased cell count and a positive colloidal gold. About eighteen months before this happened he had broken his leg and was in the Nashville General Hospital. The bone would not unite properly and was reset according to him two or three times. He was in the hospital several months. Every new staff man would take a blood Wassermann and it would be negative. No spinal was ever done and no treatment was given for syphilis. This was an early case of general paralysis and he was given the malaria treatment plus Bismarsen and his spinal fluid became normal and his mental condition apparently did the same. He was instructed how to take care of himself and was returned to court about one year after he was received at the Central State Hospital. This man did not need to be punished, but he needed treatment. He was released from his charge and is now living a happy, normal life.

There were four cases of psychoses with epilepsy. One committed murder and two attempted to do so, and the other one committed rape. This type of patient is looked on by many as harmless, but an epileptic is one of the most dangerous of all insane. They are extremely irritable and will kill on the least provocation and often have no recollection of it as their crimes are frequently committed just before or just after a convulsion when they are in a state of confusion. It would be more humane, as well as safer for society, if epileptics were sent to a hospital indefinitely rather than to prison to be released on society again. Tennessee has no colony for epileptics as the more progressive states like New York, New Jersey and Massachusetts. We cannot take an epileptic unless he has a psychosis along with his epilepsy. Now one of the patients found not insane was an epileptic and killed his wife and mother-in-law. If Tennessee had had a colony he could have been sent there indefinitely, but since there was none, we made our report strong that he should never be released on society, although not insane, so he received a sentence of forty-two years which was very likely influenced greatly by our report.

There were five cases of manic depressive psychoses. No particular crime predominated. This is the type every one recognizes as insane and the result the most of them are sent to a hospital for the insane before they have an opportunity to commit a crime.

There were four cases of psychoses with cerebral arteriosclerosis and three of the four committed murder and the other one attempted to do so. This disease is seldom found before fifty years of age, and more frequently after sixty. It is an unusually dangerous type of mental trouble because ideas of persecution and infidelity are so frequent. Frequently their friends and relatives do not recognize they are sick mentally, but only physically, and the result is someone is killed and the man is tried for murder without his mental illness, the real cause of the murder, ever being considered. Now one of the cases was a physician and belonged to one of the state's outstanding families. His close relatives had reached the top politically, financially, and socially. This man was tried, with psychiatrists testifying on each side. It was evident from the testimony he was insane, but due to the method used to prove it, the jury did not consider it and sentenced him to a long term in prison. The Supreme Court reversed the decision, evidently recognizing the man was abnormal. This case was in court several years costing an enormous amount of money and valuable time of many people. Finally he was sent to us for observation. We found him mentally sick and he had been for many years, although he had been practicing medicine. This man had visual hallucinations, ideas of reference, ideas of persecution, defective memory, defective judgment and had evidently deteriorated some, although, he was still a learned man. His lawyers were plainly trying to get him released on insanity without sending him to a hospital for treatment. Our report stated he was insane and dangerous, although, the party he had the principal ideas against was dead, because he would form new ideas. We stated he would never get well and death would end the scene and sure enough he died from a cerebral hemorrhage before he had his trial after our report. This man and his family could have been saved much money and worry if his case had been handled properly at first. There was nothing particularly unusual about the smaller groups.

Now the final results of our examinations and observations of one hundred and twenty patients showed there were fifty-six patients definitely insane which would be 46.6 per cent of the number examined. Then there were twelve feeble-minded which would be ten per cent. There were twenty-two psychopaths, 18.3 per cent, abnormal individuals but not insane. There were thirty that were normal which would be 25 per cent. Of course, there would not be such a large per cent of insane and abnormal if all criminals were examined as these were suspected by the laity of being abnormal.

In closing I want to say that I hope some of you may, from this review of the work at the Central State Hospital, see that all criminals should have a psychiatric examination before trial in order that the mentally sick may be found and treated; in order that cost of trials may be materially reduced; in order that those that are not insane may receive an indefinite sentence or life if chronic offenders so property and lives may be spared from further crimes by them. We have done all this work for the courts without one penny remuneration and it is the type work for which twenty-five to five hundred dollars per day is paid owing to the prominence of the case. Now the courts have always believed us and have not given one decision against us out of one hundred and twenty. Why? Because they knew our opinion was not bought. It is not right though that we or any group of physicians should have to do work like this for nothing. Every physician should receive reasonable pay for his work. It is my idea that a law should be passed appointing a group of psychiatrists to do work of this kind. They should be paid by the state in all cases. Their work then would be just as unbiased as ours has in this. This work has increased so that the physicians at the Central State Hospital hardly have time to do it and keep up with their regular work. If the members of the society are sufficiently interested to go on record in favor of the passage of a law to have all criminals examined before trial and all prisoners before pardon or parole and for the appointment of psychiatrists paid by the state for this purpose it certainly would be a progressive step, one that is to come eventually.

DISCUSSION

DR. W. S. FARMER (Nashville): Gentlemen of the society, I have often heard it said that we should save the best for the last. From a medical, from a sociological, and from a legal standpoint, according to my way of thinking, this is one of the best papers that has come before the association. There is nothing more fascinating to me, since I have been practicing medicine, than the study of the relationship of mental disease and mental defects to crime. When any one takes up the study of mental disease, he crosses a scientific frontier and enters into an entirely new field of thought; he studies emotional disorders, character defects and delusions and hallucinations.

Dr. Brackin has given our experience since he has been connected with the Central Hospital, since January, 1928. In 1926 I read a paper before this society in this city on the importance of mental examinations, in which I stressed that all criminals should be examined before trial and also before being discharged from our prisons. I have never had any cause to regret that statement that I made in that paper.

Dr. Brackin spoke of the recidivist and repeated offender. In my hand I hold a report from the Department of Commerce at Washington of the prisons, both federal and state, and during the year 1928 there were 55,700 admitted in our various prisons in the United States from our various courts. With those that were already in the various prisons there were 56.5 that were recidivists or repeated offenders; 35.6 per cent of the total of 116,000 had been in the state prisons one or more times, some of them four and five times.

I have been in this work long enough that I know many men in Tennessee who have been in the state prison two, three and four times.

We believe that when a man is charged with crime there is such a thing as a legal diagnosis as well as a medical diagnosis, and we believe that in all cases there should be an investigation into the mental condition of that man. We do not believe, however, that all men are insane, but a good percentage of those who commit crime are feebleminded or defective along ethical and moral lines, as Dr. Brackin outlined in his paper.

The Doctor spoke of the oldest case of the courts in our hospitals. About 1916 or 1917, I think it was, there was a man in Carroll County who killed his mother-in-law. He escaped, left the community, and was gone for a year or two years. Finally he was apprehended. He was brought back and tried. In that particular case there was a great expense to the state, two experts on one side swearing that he was insane, two on the other side stating that he was not. As the Doctor stated in his paper, the Supreme Court referred that case to us, which was some eight years before Dr. Brackin was connected with our institution, and that was the beginning of the work along the line that he has written about. Our work is original on our part so far as working out these cases is concerned, but the suggestion for this line of work came from the Supreme Court of our own state, and I wish to give them credit for what we have been doing at the Central State Hospital.

Dr. Brackin spoke of general paralysis of the insane, and many other diseases. We have found out from experience, gentlemen, that many cases of general paralysis of the insane, or what some call paresis, or syphilis of the nervous system, will commit larceny, forgery, homicide. While the majority of these cases do not develop until between thirty and fifty years of age, if a man is tried in court between thirty and fifty years for larceny, forgery or homicide, why not stop and have a thorough examination and see if he has syphilis of the nervous system, or any other mental trouble?

He also spoke of epilepsy. As you all know, history is replete with the casual relationship of epilepsy to delinquency. Mythology tells us that Hercules murdered his wife, Ophelia, in one of these automatic attacks of epilepsy so characteristic of that disease. One day as Hercules was offering a sacrifice to Jupiter, he stopped, his bloodshot eyes rolled upwards, the saliva ran down his beard, his smile became convulsive, and he went into a spasm. They thought it was over, when he rushed to his weapons, ran after his wife and children, killed all of them, and was in the act of slaying his father when Pallas appeared and threw him on the ground, where he went into a profound sleep. After it was all over, the sight of the dead around him rendered him in a terrible mental shape, and he was surprised because he was told that he was the author of all of this mischief.

I could talk for an hour or so, but my time is limited. I just want to say that only recently I was called on to examine a man in Memphis who was sent to the state prison a short time ago, about three months ago. I had examined the man several years ago. His given name was Allen, and I told him: "Allen, you've got sense enough to get in, but you haven't got sense enough to stay out." Every time he has been sent to the penitentiary he has been sent for stealing. After he got out, he went to Alabama, and down in Mobile he got in jail and wrote me. He gave me the name of the judge, and asked me to take it up with the judge and get him out. I answered his letter and reminded him what I had told him several years ago, and I said: "Allen, you tell the judge I said to put you up for life, and for fear you don't tell the judge I'm going to send the judge a copy of this letter."

A few weeks later I got a letter from the judge. He said that was the funniest letter he had ever received—to think that a man was in jail and had called on some one he supposed was one of his friends, and then the man wrote him that he ought to be put up for life. The judge didn't say what he had done, but he went to the federal prison for a few years, and he came back here in Memphis just before Christmas and stole another car. According to the history of this man and what I know of him, he was educated in the reformatory, he spent three terms in the state prison, he served a term in the federal prison, and in a few more months he will be out to steal another car. We believe that in cases of this type it is charitable, it is humane, to protect them. A man of that type needs protection and should be permanently segregated. But he never can accomplish anything along that line until we have better laws.

I want to say, in closing, that we have done, we think, a lot of pioneer work in this line. We started this work one year before the Briggs law was passed in Massachusetts to have these people examined. I take it the majority of you are familiar with that law.

We lecture to the Vanderbilt University students and to public health nurses and to city health nurses of Nashville, and while I don't want to appear egotistic, I want to tell you what we often tell them at the beginning of our lectures: that all the institutions around Nashville, including Vanderbilt University, Peabody, and all the schools, revolve around the Central Hospital just like the satellites revolve around the sun; for if you want to know why there are so many failures in life, why there is so much crime in the world, why there are so many divorce proceedings, all you have to do is to come to the Central Hospital and live with us a while and study the life histories of these individuals, and the mists will be cleared before your eyes.

I want to insist that we give more time to the subject of psychiatry.

"SKULL AND BRAIN TRAUMA"*

JOHN R. SMOOT, M.D., Knoxville

INJURIES TO THE BRAIN are daily adding to our already long list of morbidity and mortality, the increase being due to the use of rapid modes of transportation and our high speed machine age. Skull and brain trauma is indeed one of the great economic problems of modern life.

A comparatively recent statistical tabulation made by Mock and Tower (1) from the coroner's office of Cook County, Illinois, showed that of 1,649 accidental deaths occurring during six months of 1930, 35.5 per cent was due to skull fracture and injury to the brain. These accidents may happen in any crossroads, village, hamlet, town or city. Therefore it is necessary for all of us to have some idea of some well outlined plan of treatment.

There are far too many ramifications to the subject for one to cover in a single paper. I shall endeavor to give a few high points in diagnosing and treatment. First, we must remember—the brain substance is a semi-solid and is incompressible as water and blood are incompressible, although it is said 8 per cent of brain bulk can be decompressed if done slowly. The brain is in a bony non-yielding box, the dura is also inelastic non-yielding.

The skull may be fractured without injury to the brain or the brain may be severely traumatized without a fracture of the skull. The important thing about the head is the brain. The skull is to be regarded merely as a box holding the brain. The fracture of the skull is probably of least importance from the standpoint of patient and physician. Fractures of the skull are rarely, if ever, the cause of death, although it is conceivable that a spicule of bone may be driven into the medulla and thus terminate the patient's life. The great majority of cases that die from head injuries succumb to intercranial pressure, sub or extra dura hemorrhage or massive brain injury. Classification of Ochsner (2) I think is very good and is as follows: Those with cerebral injury associated with or without cranial injury:

I. 1—Concussion.
   2—Edema.
   3—Contusion.
   4—Laceration.
   5—Hemorrhage.
      (a) Intradural.
      (b) Extradural.
II. Those without brain involvement:
   1—Scalp wounds.
   2—Skull fractures.
      (a) Vault.
      (b) Base.
      (c) Simple.
         1—Linear.
         2—Comminuted.
      (a) Depressed.
      (b) Compound.

History must be considered as a very important factor as in attempting to make any diagnosis. One should ascertain time and nature of trauma if unconscious at any time and if so, how long. Occasionally we have a case of unconsciousness with many of the signs of brain injury, apoplexy or alcoholism in which there is no history of accident.

We may all recognize shock and it is the first consideration above all else. Shock is determined by subnormal temperature, diastolic pressure below 60 and a pulse usually above 120. The extremities are usually cold and wet. Increase in respiratory rate, and at times a rising pulse pressure.

Pulse, temperature, respiration and blood pressure are taken and recorded. This routine should be repeated every 15 to 20 minutes until shock is relieved and then every hour or so.

1—Conservative treatment of Dr. Temple Fay (3) is followed:

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*Read before the Eye, Ear, Nose, and Throat Section of the Tennessee State Medical Association, Memphis, April 12, 13, 14, 1932.

Treat shock by lowering head, depending upon severity of shock, warm dry clothing, heat applied to the body surfaces. Atropine sulphate, surgical piturtrin, strychinin, ergot and ephedrine if necessary.

The purpose of the above is to prevent further loss of fluid from the skin surfaces, conserving fluid needed for blood volume. Stimulants are directed toward vasoconstriction of the peripheral arterioles, thus improving diastolic pressure, favoring better oxygenation. Cardiac stimuli are not needed as heart is active enough.

Lacerated and bleeding surfaces are cleaned and packed with antiseptic-soaked gauze, and sterile dressing applied. No attempt to repair superficial lacerations or injuries is attempted, since they are better taken care of in operating room after shock has been relieved. Every effort should be made to combat shock and the oncoming intercranial pressure.

Immediate intravenous administration of 50 per cent glucose to withdraw from the tissues the fluid needed for blood volume, replacing from patient's own tissues the needed amount without the necessity of giving normal saline solution by vein. Fifty per cent glucose also prevents further escape of fluid into the tissue, which is important to the cerebral mass and the cerebrospinal fluid space. Where oncoming intracranial pressure will undoubtedly ensue in the next few hours, if the trauma has been severe, glucose may be repeated every 4 to 6 hours if necessary. The period of shock is considered over when temperature returns to normal or above and when the pulse diminishes to the neighborhood of 120.

If bleeding from the ears is present, the ear is cleansed and tampons soaked in mercurochrome 2 per cent inserted into external auditory canal.

If bleeding from the nose a packing of gauze should be placed in nasal orifices. After shock has been controlled then a complete physical examination should be made to determine any further injuries. Studies should be begun to determine the seriousness of the intracranial trauma. X-rays may be made at this time.

Special attention should be paid to ears, nose and mouth in order to determine whether there is evidence of escaping blood or spinal fluid. The prognosis is much worse in those cases in which there is hemorrhage from the ears, nose or mouth.

The eye manifestations are of extreme importance as to the extent of injury and the prognosis of the case. Of 610 cases of fractures of the skull observed by Blackeslee 78 per cent showed eye signs, of which number 79.5 per cent consisted of pupillary changes. Forty-seven and five-tenths per cent of the patients with pupillary changes died. These findings are not only of prognostic value, but are of diagnostic value in that the dilation and fixation almost invariably occur on the side of injury and are usually the result of hemorrhage.

Of greatest importance from a diagnostic and prognostic point is the determination of the cerebrospinal fluid pressure, as well as the character of the fluid. As the immediate symptoms in acute craniocerebral trauma are the result of increased intracranial pressure, except in those cases where there has been extensive injury to the cerebrum.

A pulse below 60 and especially as it approaches fifty or falls into the 40's is indicative of increasing intracranial pressure and if persistent points to medullory compression. When the latter condition is established the pulse, temperature and respiration usually climbs. A rapid, thready pulse of over 100, respiration of twenty-eight to forty and temperature of 102 or over are all very serious. Prognostic signs (Mock 4). Decompression should be done before this happens. Operation is indicated in depressed skull fractures and localized intracranial hemorrhage.

A lumber puncture with careful monometric pressure readings should be done as soon as the period of shock has passed. Also a neurological examination may be done. Bring the neurologist to the patient and do not try to take the patient to the specialist.

If the spinal fluid is clear, treatment should be directed to the control of intracranial pressure. Do not forget that you still may have subdural or epidural hemorrhage with clear spinal fluid, so watch neurological manifestations of subdural or epidural hemorrhage. When the spinal fluid is clear with a pressure 14 mm. mercury or over, you should suspect the possibility of hemorrhage.

If the spinal fluid is bloody, all the fluid that can be obtained should be drained, not only to reduce pressure, but to remove as much blood as possible. Blood in the spinal fluid indicates laceration to the brain or rupture of a surface vessel. For a period of ten days spinal fluid should be withdrawn from time to time to prevent overaccumulation. Some authorities advocate removing one-half of all above 10 mm. of mercury.

It is very important to prevent restlessness so as to prevent further cerebral bleeding. Morphine should be avoided unless other sedatives fail. Morphine and its derivities depress the respiratory center. Sodium luminal hypodermically, chloral hydrate 15 grains with Sodium bromide 30 grains is given by mouth and repeated every four hours if necessary or double the dose and give by rectum in 4 ounces of hot rap water. The diet should consist of solid food.

If the pulse persists over 120, 50 cc. of 50 per cent glucose may be repeated every four hours. Intake of fluid should be controlled, not more than 20 ounces every 24 hours when spinal punctures have been discontinued. If continuing spinal drainage for bloody fluid 30 ounces every 24 hours should be the intake.

When the pulse pressure tends to rise or approach the pulse rate, this is indication for relief of intracranial pressure, by spinal puncture. Glucose or a magnesium sulphate enema magnesium sulphate crystals 3 ounces, glycerine 1 ounce, water 6 ounces.

Fay (5) says: Operative exploration, when indicated is best accomplished after the seventh or tenth day, should other signs or symptoms be satisfactory.

SUMMARY

1—Treatment of skull and brain trauma is of great exonomic importance.

2—First treat shock and do not subject patient to unnecessary examination, X-ray and operative procedures.

3—Have a clear, simple outline of treatment for these cases.

4—The most important thing is the injury to the brain.

5—Oedema is the most frequent cause of increased intracranial pressure.

6—Dehydration method with 50 per cent glucose intravenously is most conservative. With repeated spinal tap in selected cases.

7—Operative treatment in compound fractures and depressed fractures.

REFERENCES

(1) Mock, Harry E.: Skull Fractures and Cerebral Injuries. International Jour. Med. and Surgery, January, 1931.

(2) Ochsner, Alton: The Diagnosis and Treatment of Acute Craniocerebral Injuries. Am. Journal of Surgery, Vol. XII, Nos. 2 and 3, pp. 222-224, 523 to 531.

(3) Fay, Temple: Clinical Considerations Surrounding Head Injuries. Clinic of Dr. Temple Fay, Vol. II, 87 and Head Injuries. The results obtained with Dehydration in Forty-eight Consecutive Cases. The Journal of the Iowa State Medical Society, October issue, 1930.

(4) Blakeslee, R.: Eye Manifestations in Skull Fractures. Arch. Opth. 2; 566, 1929.

DISCUSSION

DR. R. E. SEMMES (Memphis): It is very encouraging to hear the brain given so much consideration in discussing the subject of head injuries. It is a good sign that the skull is being relegated to its proper place and that the brain, which is the most important of the organs of the body, is being considered with due concern.

In regard to the diagnosis, I would suggest that you consider separately the brain dysfunction which is due to local contusion, to severe shake-up, to intracranial hemorrhage and edema, with due consideration for the fact that any one of these factors may mask the signs and symptoms of the others or may simulate them.

In regard to treatment, I do not think that it is possible to have a routine treatment for a problem which is as complicated as the usual head injury. I often think of the Mexican bull fighter, who, when asked how he fought a bull, answered: "You take your cape on your left arm and your sword in your right hand and stand like this, and you take a good look at the bull. After that, what you do depends upon what the bull does." I think that applies very well to these cases, for they not only change their aspect from hour to hour, but sometimes even within the hour.

It might be worth while to mention some of the common errors in treatment of these conditions. One of them is to allow a patient who is unconscious to lie on his back and fight for breath, become cyanotic, deprive the brain cells and the heart muscle cells of oxygen, and also produce an anoxemia of the brain which leads to further edema and increased pressure. The simple expedient of turning the patient on his side usually will correct this grave difficulty. If not, the tongue of course can be pulled up or an airway placed in position in the throat.

Too little mention, I think, is made ordinarily of the dangers of rapid withdrawal of fluid and also of late withdrawal when the free fluid has already been removed.

I cannot agree with the Doctor that operative procedure should be delayed for seven to ten days. The indications for operation are usually a depressed fracture or a blood clot pressing upon the brain, or such high pressure that the patient's life is threatened. So I should say that the patient who doesn't have these first two conditions and can be gotten by the third, by the tenth day will be free from any concern so far as operative interference is concerned.

In other words, the brain should not be permitted to undergo the pressure of depressed fracture or blood clots for that long a period, in my opinion.

Dr. Smoot has already said that this problem is entirely too complicated to cover in any thorough manner, but I want to compliment him on picking out the important high points which he proposed to bring to our attention.

DR. JOHN R. SMOOT (Knoxville): I want to thank Dr. Semmes for being so lenient with me.

I am very proud of the fact that he was one of my instructors, and what little I know about injuries to the brain and skull I have learned mostly from him.

I merely mentioned the proposal to wait until the seventh or tenth day for operation because I have seen two different cases recently, one of which was a patient brought in with apparently severe trauma to the skull and brain; he was taken out of his bed, X-rays made, and they insisted on operation immediately, suturing the scalp wounds. I condemn that treatment because I think that the shock certainly was increased by these procedures.

It is a well-known fact that we cannot have a definite plan of treatment, but we should know what not to do.

HERPES ZOSTER OPHTHALMICUS*

JAMES B. STANFORD, M.D., F.A.C.S., Memphis

HERPES ZOSTER OPHTHALMICUS, or Zona Ophthalmia, is an inflammation of the ophthalmic branch of the fifth cranial nerve, of the Gasserian ganglion or of the ciliary ganglion, which is manifested by neuralgic pain in the area supplied by the nerve, by fever and by an eruption of vesicles over the area of distribution of the nerve. It is now pretty well established that the lesion is in the Gasserian ganglion, though why the disease usually selects the upper part of the ganglion has not been explained. Much has been written about this disease, but little is definitely known of it. The author admits that he is no better informed than those who have preceded him in the literature on the subject, but hopes that this collection of some of the known data will be of help in diagnosis and treatment of the disease.

The fifth cranial nerve resembles a spinal nerve in arising by two roots, in having a ganglion on its posterior root, and in being a compound nerve. The first, or ophthalmic branch of this nerve, consists exclusively of fibres derived from the larger (sensory) root and ganglion, and is the branch which concerns us in this study. It is a short, flat nerve about one inch in length which arises from the upper part of the Gasserian ganglion and passes forward along the outer wall of the cavernous sinus and divides into the frontal, lachrymal and nasal branches before entering the orbit through the sphenoidal fissure. It gives off a branch to the dura, is joined by filaments from the cavernous plexus of the sympathetic, and gives off small branches to communicate with the third and sixth nerves and sometimes with the fourth. I will not bore you with the details of the courses of the various branches, but their distribution is important. These fibres are distributed to the ciliary ganglion, to the lachrymal gland, the lachrymal sac, the conjunctiva, the caruncle, the skin of the eyelids, the skin of the forehead, and of the scalp to the vertex, the pericranium over the frontal and pariental bones, some of the mucous membrane of the nose, the skin of the nose, the ciliary muscle, the iris and the cornea. According to Tiedeman, a branch from the ciliary ganglion penetrates the optic nerve with the central artery of the retina. Thus we may understand some of the complications and sequelae of herpes zoster which might otherwise be difficult of explanation.

The disease begins with severe neuralgic pains in the frontal region and is not infrequently diagnosed as frontal sinusitis before the vesicles appear. This pain precedes the eruption several days, then the skin becomes red and swollen, fever is noticed and the vesicles appear upon inflamed bases. This redness and the vesicles are limited by the median line of the face, except in the exceedingly rare bilateral case. This sharp limitation to one side, the neuralgic pain and the character of the vesicles serve to differentiate the disease from erysipelas. The vesicles are first clear, but soon become cloudy, or even bloody, and then dry into a crust. These crusts fall off, leaving scars which are permanent and may serve to diagnose the patient's ailment years after his recovery. The vesicles are distributed over the brow, the anterior part of the scalp, the upper lid; sometimes on the conjunctiva of the lids and globe and sometimes on the cornea. These corneal vesicles, unfortunately, break down to form ulcers and leave corneal opacities. Keratitis profunda is also said to be a result of herpes zoster in some cases, and rarely a trifacial paralysis remains which results in keratitis neuro-paralytica. Anesthesia or neuralgia, or both, often are present after the acute symptoms subside, and the temperature of the skin of the affected side may remain elevated after other signs of inflammation are no longer present.

Inflammation of the iris and ciliary body occasionally occur and this may pass on to the deeper part of the eye, causing a destructive ophthalmitis. Glaucoma is seen as an accompaniment or sequel to this more severe type of the disease. Sometimes the tension is quite high early in the disease and lower than normal later, and the cornea is frequently anesthetic for long periods after subsidence of the acute symptoms. It is believed that these severe destructive changes take place only when the nasal branch of the ophthalmic nerve is involved, and a study of the anatomy makes this belief plausible. Besides corneal opacities, iritis, iridocyclitis and glaucoma, atrophy of the optic nerve and oculomotor paralysis have been known to follow herpes zoster. Whether the disease is mild and simple, or severe and complicated, the patient is acutely sick, is petulant and disagreeable and is in need of relief of discomfort. It is not well to dismiss him with some casual remark about a little case of shingles.

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*Read before the Eye, Ear, Nose, and Throat Section of the Tennessee State Medical Association, Memphis, April 12, 13, 14, 1932.

The etiology of Zoster is still obscure and many theories have been advanced to explain its occurrence. Chilling the body, head injuries, use of arsenic, carbon monoxide poisoning and syphilis have been considered causes in various cases. Varicella, encephalitis, poliomyelitis, tuberculosis, injury to the spinal cord, tabes dorsalis and tumor of the pons, have also been ascribed as causes. I have seen more cases in the spring than in other seasons, and this observation led me to suspect some seasonal cause; but investigation has caused me to give up this idea. I believe it more likely that certain forms are due to epidemic diseases which happen to occur in the spring, or which are favored in that season. No one who has seen many cases of Zoster and who has worked them up carefully can escape the suspicion that syphilis is an important etiological factor. Some students have suggested that herpes zoster, herpes simplex, encephalitis and chicken pox are probably caused by the same virus. One attack of zoster seems to render the patient immune to other attacks and this may be considered as evidence of some virus as the exciting cause of the disease.

Treatment of herpes zoster is largely symptomatic and is directed at the relief of pain and the prevention of excessive disfigurement. Naturally any general disorder which may be present, whether or not considered as a cause of the herpes, is treated at the same time. Mild dusting powders are used on the vesicles, or they may be covered with flexible collodion combined with laudanum. Aspirin or morphine or other analgesics may be necessary for the relief of pain. Quinine is given empirically but its usefulness is doubtful. Intramuscular injections of convalescent serum was considered helpful by J. S. Friedenwald. Recently my attention has been called to a method of treatment which is reported to give very satisfactory results in the relief of pain, and in shortening the period of the disease. This treatment consists in giving one or two doses of solution of pituitary such as is used in obstetrics. Reference to the literature indicates that this is by no means a new treatment, but it had escaped my observation, and I shall be grateful for any information on the subject that those who discuss this paper may give me. The rationale of this treatment is still obscure to me. The dose is one-half to one cubic centimeter and the treatment is, of course, contraindicated by pregnancy. Ocular complications vary very much in individual cases and are treated as they arise. In general, atropine, hot applications, and dionin are indicated, though eserin or glaucosan may be preferable to atropine under certain circumstances.

DR. T. C. CHAPMAN (Bronwsville): Dr. Stanford has given us a very interesting and instructive paper on a rather rare condition. The localization of Herpes Zoster as to frequency occurs in this order: chest, abdomen, extremities, face, neck.

A point worth noting is that the ocular complications begin only after the skin eruption has reached its height or is subsiding. The cornea becomes cloudy, vesicles form which rupture, leaving superficial ulcers, which, however, do not perforate. It is also interesting that even with these severe ulcers, hypopyon does not occur.

Under etiology, besides the causes enumerated by the essayist, during the World War there were several cases of Herpes Zoster Ophthalmicus reported following the administration of typhoid vaccine, usually immediately following the third dose. Abscessed teeth have also been atributed as causes. I have always thought of Herpes as a toxic neuritis. General debility is a predisposing factor, most of the cases being seen in people between the ages of sixty and seventy. However, the youngest reported case that I have found was in an infant of fifteen months.

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H. H. SHOULDERS, M.D., Editor and Secretary

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EDITORIAL

STATE MEDICINE

The term "state medicine" has come into quite general use both in conversation and literature, by lay people and by doctors. It is so loosely used that it fails now to convey a definite meaning. For this reason there is much confusion of thought in regard to it. This confusion would be cleared away if the term were used always to convey a definite meaning. The following is, we believe, a good definition. "State medicine is a system of medical practice which is financed by state funds and controlled and directed by state executives." This definition has two elements. The first part has to do with financing. The second has to do with the control and direction of the care of sick people.

The funds used to carry out a plan of state medicine are raised by taxation. The power to control and direct the expenditures is vested in a person or a board. The doctors under the plan work under orders from state authorities. Sick people accept the services of the doctors and nurses designated by the state authority. All liberty of choosing is lost both by sick people and by doctors.

This system is opposite to the system of practice as we know it in this country. The sick person selects from among the doctors available the one in whom he has confidence. The physician on the other hand is at liberty to accept or decline the call. If a consultation is desired there is complete liberty in the selection of the consultant. There is complete liberty in the selection of the hospital, nurses, etc.

No one can say he believes in democratic principles and in state medicine at the same time. It simply cannot be done. He is a communist whether he admits it or not.

We have state medicine already to a degree. An example is certain public health departments. A unit will administer antitoxin, etc. That is a part of medicine which may be done by routine, according to rules laid down by the head of the department. Such rules, for example, as that which requires each child to be vaccinated against smallpox before entering school. The procedure is simple. It requires no judgment and little skill. This phase of medicine is different from the care of a sick person. In the care of a sick person a diagnosis must be made and treatment carried out, in all of which sound judgment must be exercised. Developments in the way of complications may make necessary changes from day to day. A capable practitioner with freedom of judgment and a sense of responsibility and a patient with freedom of decision get the best results all the way around.

The discussions of "state medicine" which have appeared in lay publications leave no accurate impression as to what it would be like in actual practice.

There are some communities which follow a system similar to state medicine. Such communities, for example, as a mining camp, an industrial corporation, etc. In many instances these do not conform to state medicine entirely in that the workers have some voice in the selection of the doctor. These are held up, however, as demonstrations of the advantages of state medicine. As a matter of fact the system is a makeshift, probably the best they can do in the circumstances, not ideal by any means.

It is often alleged that certain groups of people cannot afford to pay the present cost of medical care. That is true. Neither are they able to put their children in ideal homes. Their food many times is not proper and not properly prepared. These are economic questions very largely. If one can justify the adoption of state medicine on economic grounds, the same arguments will apply to all necessities.

Laundries owned and operated by the state in each community would undoubtedly contribute to the health and happiness of tired mothers unable properly to care for children and do the family washing, too.

Commissaries owned and operated by the state at no profit would cut down the cost of food to these poor people and contribute to their better nourishment and better health.

This same rule would apply with reference to clothing, housing, fuel, electricity, insurance, both health and life, etc.

But where is the tax money to come from to pay all these expenses? The state must collect the taxes from the people.

Yes, free laundries and soap scattered throughout the state would contribute as much to the public health as any one thing the state could do. It would be far better to try that out as a project before we try state medicine in a form which applies to the care of sick people.

THE NEED FOR SOME LEGISLATIVE ACTIVITIES

Since the meeting of the State Society at Memphis last April considerable publicity has been given to the action taken by the House of Delegates on the recommendations of the Liaison Committee. The reaction from this publicity has been very favorable. Several candidates have pledged themselves to support legislation along the lines suggested.

Doctors do not play politics a great deal. It is perfectly obvious now that all good citizens must do more thinking and acting with reference to public affairs if these affairs are ever brought back to a sensible and stable condition. Doctors simply must be good citizens in this respect whether they like it or not.

Doctors know the health needs of the public. Doctors know something about the policies that will be effective.

In recent years various lay groups have organized themselves into small units and these small units have made an appeal to sentiment rather than to good judgment. As a result of this many things are being done by the state which never should have been done by the state at all. Between now and next January doctors should busy themselves in contacting candidates for the House and Senate with reference to this legislation.

The rapidity with which our state's affairs are brought back to a sensible basis and the thoroughness with which this is done is dependent entirely on the activities of the good citizens.

Politicians are responsive to the demands of the public. These minorities who have been so active in the last several years in various *uplift movements* have lifted a lot of people almost entirely out of house and home by high taxes and lifted much of the funds out of public treasuries.

Dr. H. B. Everett is chairman of the Committee on Public Policy and Legislation. This committee is instructed by the House of Delegates to secure the enactment of a lew embodying the principles set out in the recommendations of the Liaison Committee.

RESOLUTIONS

The Giles County Medical Society at one of its regular meetings appointed the undersigned committee to prepare resolutions as a testimony of the high esteem, respect and honor in which Dr. A. M. Allen, who died at the home of his brother-in-law, Dr. A. W. Deane, May 13, 1932, was held by the members of this society and the medical profession of the State.

Dr. Allen was born in Lewis County, Tennessee, November 8, 1850; moved to Giles County in 1856, and was educated in the public schools of this county. He graduated in medicine from the University of Nashville in 1873. He began the practice of medicine at Shady Grove, Hickman County, Tennessee, and continued there twenty-two years. He then moved to Giles County and continued in practice here until a few months before his death, having been in practice for fifty-seven years. At the time of his death he was eighty-one years of age. To his profession he was ever loyal and faithful; devoting his active and more than ordinary intellect to the acquirement of the newer methods of diagnosis and treatment, which he might apply to benefit to his fellowman.

Having a high sense of honor of medical ethics, which should control the conduct of a gentleman towards his profession and the laity; he was ever courteous and mindful of the rights of others. He was a member of the Giles County, Tennessee

State Medical and American Medical Associations. Having served as president of the local society a number of times and always discharging his duties with zeal and credit, he possessed a rare ability as a speaker and was always ready and willing to discuss any subject that came before the society;

And, Whereas, his usefulness as a medical man and member of this society was recognized and appreciated for his true worth;

And, Whereas, We, the surviving members are deeply grieved at his passing and are keenly sensitive to what we and the community have lost.

Therefore, Be It Resolved, That this society pay this tribute to his memory by adopting these resolutions and recording them upon our Minute Books and publishing them in the local press and sending a copy to the family.

Committee:

DR. J. K. BLACKBURN, Chairman;
DR. E. M. FUQUA,
DR. W. J. JOHNSON,
DR. J. B. WRIGHT.

NEWS NOTES AND COMMENTS

Dr. I. Jones has located in Paris and will be connected with Drs. Rhea and Boone at the Wiggins Clinic.

Dr. W. W. Hill, of Harriman, has moved his office to the First National Bank Building.

Dr. H. G. Bland has associated himself with the Etowah Hospital and will do general practice and surgery.

Dr. Jesse C. Hill exhorts the Knox County doctors in this manner:

"You know the weather is hot, but remember you have a hot medical society, and that makes things good and hot which is a sign of progress. A cold medical society would mean a dead medical society. Let's all attend and we will be progressive doctors."

The twenty-second annual Clinical Congress of the American College of Surgeons will be held in St. Louis, October 17-21, with headquarters at the Jefferson Hotel.

The Fourth Annual Assembly of the Southeastern Surgical Congress will be held in Atlanta, Georgia, March 5-7, 1933.

The annual meeting of the Frisco Railway Surgeons' Association will be held in Memphis on November 14-15 at Hotel Peabody.

Dr. K. S. Howlett has practically recovered from the injuries to his hip.

Dr. C. P. Fox, of Greeneville, addressed the patients at the Soldiers Home in Johnson City recently.

Dr. L. R. Polk, of Memphis, broke his leg by stepping into a miniature bathing pool in his back yard.

Dr. Harry T. Hillstrom, of Vanderbilt Hospital, was seriously injured in an auto accident thirty miles north of Springfield, Illinois. Last reports say the doctor is on the road to recovery.

Read the following from the Memphis Press-Scimitar and get your society to add its effort in solving your local traffic problem:

DEATH RIDERS

"It is self-evident that ambulances hurtling thru the streets of Memphis, with siren horns screeching and screaming, jeopardize the lives of both the sick and the well."

There is no straddling in that statement, made in a resolution of the Shelby County Medical Society and passed on to Police Commissioner Cliff Davis. The physicians believe that it is as necessary to make ambulances stop for red lights as it is to stop ordinary cars, if not more necessary.

But some of the ambulance drivers do not think so, and are openly violating the law by running the red lights. We wonder if Commissioner Davis feels the same way about it as does the medical society. And if he does, has he any intentions of enforcing the law?—*Memphis* (*Tenn.*) *Press-Scimitar.*

MEDICAL SOCIETIES

Bedford County:

Wartrace was host on August 18 to sixteen members of the Bedford and Coffee County Medical Societies. It was a joint meeting with Dr. E. T. Womack, of Manchester, president of the Coffee County Society, presiding. Following a banquet the meeting was devoted to medical topics.

A paper on "Tularemia," read by Dr. E. P. Vaughan and one on "Ilio-Colitis," read by Dr. J. T. Conditt furnished the subjects on which the members spoke.

A short tribute was paid the memory of the late Dr. J. P. Taylor, of Wartrace.

Benton, Carroll, Henry, and Weakley Counties:

The Tri-County Medical Society met at the Hotel Lynn, McKenzie, on August 9, with the entire program given by Nashville doctors. Dr. C. M. Hamilton discussed, "Dermatitis," and Dr. Theo Morford discussed, "Cancer of the Cervix." The meeting was well attended and the papers were appreciated by the doctors present.

Chester, Henderson, and Decatur Counties:

A splendid crowd greeted Drs. Blue and Cassa Collier, of Memphis, on August 12, when they addressed the Tri-County Society at Henderson. All counties were well represented and every one present enjoyed the program and luncheon. This society is now holding regular meetings every second Tuesday and much interest is shown in the work.

Gibson County:

In addition to members some thirty-five visiting physicians were present to hear Dr. Rudolph Holmes, of Chicago, and Dr. Frederick C. Freed, of New York. The obstetrical problems discussed by such authorities were most interesting to all the physicians present.

Giles County:

The Giles County Medical Society met on August 25. Dr. F. B. Hulme read a very interesting paper on "The Optic Nerve and some more or less common affections of it." After the essay there were several interesting case reports.

The society meets regularly once each month on the fourth Thursday and the attendance is very good.

Hamilton County:

Future meetings are scheduled as follows: September 22—"Retrobulbar Neuritis," by Dr. Wm. A. Garrott.

September 29—"The Value of Psychotherapy in General Medicine," by Dr. F. E. Marsh.

October 6—"Recent Advances in Bladder Neck Surgery," by Dr. J. B. Killebrew.

October 13 — "Subdiaphragmatic Abscess," by Dr. Wm. J. Sheridan.

Hardin, Lawrence, Lewis, Perry, and Wayne Counties:

The society met in Waynesboro on August 30, with seventeen physicians present. The following papers were read:

"Constipation," by Dr. H. C. Boyd, Waynesboro. Discussion opened by Dr. J. T. Keeton, Clifton.

"Case Reports," by Dr. P. H. Faucett, Columbia. Discussion opened by Drs. D. L. Wood, Waynesboro, and Shields Abernathy, Memphis.

"Modern Day Surgery of the Right Abdomen," by Dr. Shields Abernathy, Memphis. Discussed by Drs. W. C. Boyce, H. C. Boyd and Chas. Webb.

"The Early Management of Acute Abdominal Diseases," by Dr. Charles F. Webb, Jackson. Discussed by Dr. J. H. Tilley and W. E. Turner.

Knox County:

The society keeps going under full steam every month in the year. The following programs have been given recently:

August 9—"Some Phases of Surgical Obstetrics," by Dr. W. N. Lynn. Discussed by Dr. Rule.

August 16 — "Medical Practice of the Future," by Dr. Joe T. Smith. Discussed by Dr. J. B. Naive.

August 23—"Cholecystitis in Children,"

by Dr. R. B. Watson. Discussed by Dr. Joe T. Smith.

August 30—"A Discussion of Animal Diseases of Interest to the Medical Profession," by Dr. Jacobs.

September 6—Dr. Hugh Reaves was the essayist.

September 20—An all-day meeting will be held in the Andrew Johnson Hotel. In addition to Knoxville speakers the program committee present Drs. McElroy and Mitchell, of Memphis, Dr. W. D. Haggard, of Nashville, and Dr. Frontz, of Baltimore. Every doctor in East Tennessee has a special invitation and with Drs. Zemp, R. B. Wood and Tom Barry on the entertainment committee a good meeting is assured.

Montgomery County:

This society continues to function under its official name but the benefits bestowed are not limited by the geography of the name. The last meeting was attended by Kentucky physicians from Hopkinsville, Elkton and Rochester. Tennessee visitors were present from Mt. Pleasant, Gordonsville, Gainesboro, Maryville, and Nashville.

A big program of scientific lectures and moving pictures was wrecked by the rain but there were impromptu talks and scientifically prepared eats in abundants.

Dunbar Cave was the scene of the August meeting and all present report one of the best "sessions" of the year.

Sullivan-Johnson Counties:

Dr. P. B. Welch, of Miami, Florida, addressed the August meeting. Motion pictures were used to illustrate the essay on "Gastro-Intestinal Reflexes."

Williamson County:

The August meeting was addressed by Dr. J. O. Walker whose subject was, "Unusual Abdominal Conditions." A round-table discussion followed.

GLEANINGS

The Doctors' Side of It.

A doctor, writing anonymously in the June issue of The Forum on "A Doctor's Advice to His Critics," admits the limitation of the profession, but to those who criticize the failures of doctors he replies they are doing the best they can, and gives a striking recital of the progress medicine has made during five generations.

Recalling that nobody understands cancer, chronic nephritis, myocardial degeneration and other such "captains of the men of death," that nobody has any adequate proof of the cause of rheumatic fever, influenza, measles or common colds, and that the whole ranges of endocrine disturbances and nervous and mental diseases are in a very unsatisfactory condition, he says:

"From this you may conclude that medicine is in a medieval condition. But you are wrong. As a matter of fact, medicine is making astounding progress, and I would hesitate to set any limit to what may ultimately be accomplished. I base this statement on the actual record of solid achievement in the past. My great-great-grandfather was a doctor of a sort but he never went to medical school. He was a blacksmith who bled people and pulled teeth. My great-grandfather was a doctor and graduated from a Class A school in 1821. He bled and he blistered and he puked and he purged—and this was about his armamentarium. He didn't even have ether or chloroform.

"My grandfather was a doctor and graduated from a Class A school in 1857. Bacteria were unknown. His appendicitis patients died of "cramp colic" and "locked bowels." He didn't know that tuberculosis was communicable. He did not have a fever thermometer.

"My father was a doctor and graduated from a Class A school in 1884. Diphtheria was rampant and deadly, and so was typhoid fever. He did not have vaccines for them; nor thyroid extract nor adrenalin nor pituitrin. Blood transfusion was unknown. He didn't even have an X-ray. Radium had not been discovered. He did not have local anesthetics. He could not even take a blood pressure. Pathological and clinical microscopy were just beginning. He didn't know that yellow fever was transmitted by mosquitoes, nor had he heard of hookworms.

"I am a doctor and graduated from a Class A school in 1920. I did not even have insulin for diabetes, nor liver extract for pernicious anemia, nor scarlet fever serum, nor the malarial treatment for paresis, nor a host of other things. Insulin and liver extract, for instance, are both veritable epics in man's struggle against disease. The public, fed on mass production, wants an epic a week at least."

As this anonymous doctor says, there are boundaries to the doctor's knowledge. His own mother has been sick ever since he can remember and he is 38, his doctor-father has high blood pressure and he himself suffers from migraine (sick headache) and has had appendicitis, influenza, mastoiditis, rheumatism and a few other things in spite of his own knowledge of medicine.

But the field of medical knowledge has been vastly enlarged in the past few decades and is being enlarged at an ever increasing rate. The brief account of more than 100 years of that progress is scarcely touched in the doctor's brief illusion to the handicaps which his great-great-grandfather, then his great-grandfather, his grandfather, his father and himself have faced. How these handicaps will be reduced as his son, his grandson, his great-grandson, his great-great-grandson obtain their medical diplomas, provided the line of doctors is continued unbroken in that family for another hundred years or so, can scarcely be imagined.

But in the meantime our doctors must work with the knowledge that has been gained so far, and it is a notable fact that doctors perform some of their greatest service for humanity in the public health field against the opposition of those who will be helped by it and the service so rendered prevents disease and thus reduces the possible number of patients which would come to them for treatment.

The doctor who has answered the critics of his profession justly says that too often those who find fault with their doctors will find their dissatisfaction had its origin in their refusal to follow the doctor's advice. The doctor advises an operation and the patient refuses. Patients will not follow a prescribed diet, they will not even take their medicines, not infrequently they will pay no attention whatever to advice given to them, they object to adequate examination, they resent questioning and they lie in giving histories.

And finally after they have rendered satisfactory service against all these handicaps, the doctors too often have to wait an unreasonable time for the patients to pay their bills.

Doctors perhaps give more of their time and energy to charity than any other professional class, and they are justified in demanding full and prompt settlement from paying patients in accordance with their utmost ability.—*Nashville Tennessean.*

ABSTRACTS OF CURRENT LITERATURE

ANESTHESIA

By Hugh Barr, M.D.
Medical Arts Bldg., Nashville

Spinal Anesthesia in Cases of Emergency Surgery. Earl George Krieg, M.D., Detroit, Michigan. The Journal of the Michigan State Medical Society, July, 1932.

In a series of 222 emergency surgical cases such as acute appendicitis, both simple and perforated, acute visceral trauma from gunshot wounds, perforated gastric and duodenal ulcers, intestinal obstruction, and other severe surgical conditions done under spinal anesthesia, the author reports the following observations.

In the entire series there were four failures to obtain a satisfactory anesthesia at the first attempt, but a second administration produced the desired result. In five cases no spinal fluid was obtained on puncture, but good anesthesia was obtained when procaine crystals were dissolved in sterile normal saline solution and injected.

It was observed that the gut was free from peristalsis in the immediate vicinity of the visceral injury or where peritonitis was present. Peristalsis began a short distance away from the injured segment and gradually became more intense until the hypermobile type was present. Due to this traumatic paralysis spinal anesthesia is not contraindicated in acute intestinal trauma or when peritonitis is present.

The five deaths that occurred during anesthesia were believed to be due directly to vasomotor collapse initiated by severe complications of the original lesion and completed by high anesthetization of the spinal nerves. Spinal anesthesia when confined to the level of the symphysis does not apparently influence the vasomotor system. Severe shock, severe toxicity and severe uncontrollable hemorrhage are contra-indications to spinal anesthesia even if adequate treatment has brought the patient's condition within the range of normal before operation.

DERMATOLOGY

By E. E. Brown, M.D.
Doctors Building, Nashville

Treatment of Vascular Nevi by Injection of Sclerosing Solutions. By George C. Andrews, M.D., and Richard J. Kelly, M.D., New York, N. Y. Archives of Dermatology and Syphilology, July, 1932.

The authors report having treated twenty patients with vascular nevi by this method. They included cavernous and capillary nevi as well as port-wine marks. The cavernous showed the most gratifying results. However, they all responded well under this treatment. The solution used was twenty per cent quinine-ethyl carbonate or sodium chloride and fifty per cent dextrose. This was diluted with from one to three parts of water. The amounts injected into each lesion were no more than two minims to any one area. The injections were given at weekly intervals. There was practically no pain and no sloughing or scarring.

OPHTHALMOLOGY

By Robert J. Warner, M.D.
Doctors Building, Nashville

Cataract. R. H. Elliot, Practitioner, London.

According to Elliot, the earlier a mature cataract is operated on the better. The patients are usually elderly, and though even extreme old age does not constitute a bar to the operation, every year younger is an advantage at a time of life when deterioration is much more rapid than in the earlier decades. No patient should be allowed to drop his ordinary activities and to sink into listlessness. Once a patient reaches the stage when he can no longer get about comfortably, or when he cannot read, write and carry on his usual occupations, he should be operated on without delay. To the skilled operator, immaturity of cataract presents no real difficulty. The fact that a cataract is commencing in the other eye is an added reason for early operation on the first one. The exact time for operation demands careful thought. The guiding principle is to get the first eye operated on and to give it time to become strong and useful before the second becomes too blind to be serviceable. This necessitates operating on immature cataracts in those cases in which the second eye follows the first after a short interval. Though a patient has a good result in one eye, the second should be operated on if cataractous, for the following reasons: 1. The sight of the first eye may be lost by injury, retinal hemorrhage, glaucoma, or other dangers common to the old; when sight is concerned, no risks should be taken and every vestige should be conserved; therefore, the margin of safety must be made as wide as possible. 2. Binocular vision is much better than monocular, and much safer. 3. The longer the operation is put off, the greater the age of the patient, and, therefore, the greater the risks of trouble.

Relations Between Eye Disease and General Medicine. E. Clarke, Practitioner, London.

Clarke believes that one of the most subtle associations, perhaps the commonest for harm between the eye and the body, is revealed in eyestrain. Every one knows that headaches may be caused by eyestrain, but even now it is not generally recognized how many complaints may owe their origin to it. Ocular migraine, dyspepsia, insomnia, general lassitude or malaise may be entirely due to eyestrain—or eyestrain may be the chief cause. The reason this is so subtle is that more often than not the eyes are not suspected. Vision is good and the patient is quite unaware that this good vision is obtained at a big expense of nervous energy. Small errors of astigmatism and anisometropia can be unconsciously corrected, and this means a constant drain on the nervous energy; impulses are passing from the brain to the ciliary muscle during all the waking hours. In the robust and the young, this may not have any apparent harmful effect; but in those who are weakly or who have a delicate nerve organization or whose "nerve balance" is easily upset, this constant drain may produce all kinds of symptoms. It must be remembered also that, in addition, this eyestrain produces reflex irritation and loss of resisting power both locally and generally, and lowered vitality.

ORTHOPEDIC SURGERY

By Robert F. Patterson, M.D.
Medical Arts Building, Knoxville

Treatment of Fractures of the Shafts of the Tibia and Fibula—A New Traction Apparatus. By R. Watson Jones, Jour. Bone and Joint Surg., July, 1932.

From the standpoint of treatment, the author divides fractures of the shafts into two groups, differentiated by the presence or absence of overriding.

Crack fractures, greenstick or those with angulation with no overriding present no difficulty, and are treated by applying a cast after manipulation with the leg hanging down in the line of gravity over the end of the table.

Fractures with overriding, or oblique ones, especially when associated with abrasions, or compounded, present the greatest difficulties in treatment.

The author discusses the disadvantages of continuous traction methods and of open operation, and then presents a method which appeals to me as being a practical and efficient way of dealing with these fractures and can be done by the surgeon without skilled help, even in his office.

An apparatus is described with a padded thigh piece in which the thigh rests, while the leg hangs at right angles over the edge of the table in front of the upright attached to the leg piece. This runs below the heel and bends forward at a right angle to give passage to a screw and hook to which a loop is attached with a pin run through the os calcis. The telescoped upright furnishes coarse adjustment, while the screw traction below provides the fine adjustment. After sufficient traction is applied the bones are molded into perfect position by pressure. A cast is applied without any padding.

When the plaster hardens the knee is extended to within twenty degrees of complete extension, and the plaster is completed to the upper thigh. A longitudinal window one inch wide is removed from the cast on the front of the ankle joint, and the os calcis pin is removed.

He does not expect any trouble from swelling or blisters. Care in observing the color of the toes is all that is necessary to avoid a catastrophe.

PEDIATRICS

By John M. Lee, M.D.
Doctors Building, Nashville

Disease of the Gallbladder in Children. Albert H. Montgomery, M.D. Amer. Jour. Diseases of Children. August, 1932.

Pediatric literature leads one to believe that gallbladder disease in children is a medical curiosity. Few cases have been reported since Gibson's report in 1722. However, Potter recorded 226 cases collected from the literature up to August, 1927. The frequency of gallstones in children is probably greater than is generally supposed, having been found at all ages, even in a six months fetus.

In addition to typhoid infection resulting in gallbladder disease, the various infectious diseases of childhood are thought to contribute to this condition, and a number of cases have occurred after appendicitis. Sex is apparently not a factor in childhood.

The clinical picture is that of an acute abdominal infection. There are pain, tenderness, rigidity, vomiting, a high temperature and leucocytosis. The pain is usually located in the region of the umbilicus and does not radiate to the back or shoulder. Jaundice may or may not occur. The gallbladder may occasionally be enlarged and palpable.

Chronic cases have not been reported so frequently as acute cases. These patients give a history of attacks of abdominal colic lasting from a few minutes to several hours, usually associated with nausea and vomiting. The other signs and symptoms of acute cholecystitis are absent. Between attacks of colic there may be symptoms of indigestion.

Dr. Evarts Graham states in his book: "Until recent years cholecystitis in the young was considered to be a rare disease. Although still uncommon, it is our opinion that if cholecystographic examination is carried out more frequently in children more cases of cholecystitis will be recognized in childhood. We feel also that probably many of the cases, first recognized later in life had their origin in childhood, possibly as cases of supposed catarrhal icterus, or of acute indigestion of some sort. In our records at the St. Louis Children's Hospital during the past ten years there were found eight cases of cholecystitis occurring between the ages of one and one-half and fifteen years, practically all of which were confirmed by operation or autopsy. All the cases subjected to operation were found to have large distended gall-bladders which were reddened and inflamed, but which showed very few adhesions and very little thickening of the wall itself."

The pathology of cholecystitis in childhood is not different to that in adults, and the same surgical principles should be followed in both. However, since children do not have the power to wall off infection in the abdomen, it is probably better not to attempt conservative treatment, but to use surgical treatment at once. If the appendix shows little or no disease at operation for appendicitis, the gallbladder should be examined carefully, as it may show pathology which will indicate the correct diagnosis and treatment.

Three cases are reported in which the diagnosis was confirmed at operation in boys aged 7, 6, and 10 years. In the first case a stone about the size of a large grapefruit seed was found in the gallbladder.

SURGERY — GENERAL AND ABDOMINAL

By John L. Dies, M.D.
1213 Exchange Building, Memphis

Peptic Ulcers and the Interbrain. Harvery Cushing, M.D., Boston. Surgery, Gynecology and Obstetrics. Vol. LV, July, 1932, No. 1, pg. 1-34.

The attempt to find a reasonable explanation for the acute perforative lesions affecting oesophagus, stomach, and duodenum, which in three instances caused early fatality after operations for cerebellar tumor, has led, not only to the review of the extensive literature on the neurogenic aspects of ulcer pathogenesis, but also to certain experimental observations that strongly suggest the presence in the diencephalon of a parasympathetic center. From this center, apparently tuberal in situation, fiber tracts pass backward to relay with the cranial-autonomic stations of midbrain and medulla of which the vagal nucleus is by far the most important because of its influence upon the activity of the lungs, heart, and upper alimentary canal.

Experimental lesions anywhere in the intracranial course of these fiber tracts from anterior hypothalamus to vagal center, presumably from parasympathetic stimulation (or possibly from vagal release due to sympathetic paralysis) are prone to cause gastric erosions, perforations or ulcers (Schiff, Ebstein, and others). Intracranial injuries and diseases affecting these same basilar regions of the brain are known to be accompanied by ulcerative lesions of the upper alimentary canal. It is reasonable to believe, therefore, that the perforations following the cerebellar operations forming the basis of this study were produced in like fashion by an irritative disturbance either of fiber tracts or vagal centers in the brain stem.

Stimulation of the postulated parasympathetic center by intraventricular injections of pilocarpine or pituitrin cause, in man, an increase in gastric motility, hypertonus, and hypersecretion leading to retching and vomiting which ultimately contains occult blood. The same effects, associated with observable patches of hyperaemia of the gastric mucous membrane have been shown (Beattie) to follow direct electrical excitation of the tuber cinereum in animals.

The active principle of the neurohypophysis (pituitrin) demonstrable in the tissues in the form of hyaline bodies, is known to find its way through the infundibular stalk to the region of the nuclear cell masses of the tuber either by direct migration (Edinger, Collin) or by the intermediation of blood sinuses (Popa and Fielding); and the secretory product may possibly pass between the ependymal cells to enter the cavity of the third ventricle (Herring, Cushing and Goetsch; Karplus and Peczink). What is more the secretion appears to be under the control of autonomic fibers that pass from the supra-optic nucleus into the posterior lobe. Hence, there is an anatomical basis for the presumption that posterior lobe extract (pituitrin) should have a stimulatory influence on the local vegative nerve centers. That intraventricular pituitrin would cause a parasympathetic discharge with vagotonic effects, whereas given subcutaneously its action resembles that of adrenalin, could not have been foretold.

The intrabrain has been shown (Cannon, Bard) to be the seat of primitive emotions which are normally under cortical control; but in experimentally decorticated animals, probably from release of the sympathetic nucleus in the posterio hypothalamus, there occur explosions of "sham rage" accompanied by a mass-discharge of the sympathico-adrenal system.

The parasympathetic apparatus, in all probability under normal conditions is likewise strongly affected by cortical or psychic (Pavlov) influences. However this may be, direct stimulation of the tuber or of its descending fiber tracts, or what theoretically amounts to the same thing, a functional release of the vagus from paralysis of the antagonistic sympathetic fibers, leads to hypersecretion, hyperchlorhydria, hypermotility and hypertonicity especially marked in the pyloric segment. By the spasmodic contractions of the musculature, possibly supplemented by accompanying local spasms of the terminal blood vessels, small areas of ischaemia or heamorrhagic infraction are produced, leaving the overlying mucosa exposed to the digestive effects of its own hyperacid juices.

Thus it is possible to reconcile the neurogenic theory of ulcerations sponsored by Rokitansky and Virchow's variously modified theory of a primary local cause, whether the lesions are considered in terms of simple erosions, of acute perforations, of autodigestive softening, or of chronic ulcers, and whether they chiefly involve oesophagus, stomach, or duodenum.

Those favorably disposed toward the neurogenic conception of ulcer have in process of time gradually shifted the burden of responsibility from the peripheral vagus to its center in the medulla, to the midbrain, and now to the interbrain, newly recognized as a highly important, long overlooked station for vegetative impulses easily affected by psychic influences. So it may easily be that highly-strung persons, who incline to the form of nervous instability classified as parasympathetic (vagotonic), through emotion or repressed emotion, incidental to continued worry and anxiety and heavy responsibility, combined with other factors such as irregular meals and excessive use of tobacco, are particularly prone to have chronic digestive disturbances with hyperacidity often leading to ulcer, effects wholly comparable to those acutely produced by irritative lesions experimentally made anywhere in the course of the parasympathetic system from tuberal center to its vagal terminals.

While this conception of the etiology of ulcer does not account for all ulcerative processes under all conditions, it offers a reasonable explanation of the majority of them and is in accord with the personal experience of most victims of chronic recurring ulcer. This, briefly, is as near as one can come, with the data at hand, to an interpretation of the neurogenic origin of peptic ulcer and an explanation of its existing prevalence.

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VALUE OF VARIOUS COMMON IMMUNIZING AGENTS*

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SINCE the discovery of bacteria a great effort has been made to discover the specific organisms which cause the various contagious diseases of children. The next step, even where we were unable to isolate the causative organism, was to obtain some agent which when injected into susceptible individuals would immunize them more or less completely for as long a time as possible from these infections. These agents are vaccines, immune sera, and toxins.

The use of the vaccines and toxins brings about active trimmunity; and the use of the immune sera brings about passive immunity.

The immune sera are used in prophylaxis against infantile paralysis, measles and tetanus; and to a less extent against diphtheria and scarlet fever. As the organisms which cause tetanus, diphtheria and scarlet fever produce exotoxins, antitoxins can be produced. Whereas, with measles and poliomyelitis in which the causative organisms have not been isolated the injection of serum from immune individuals into those exposed has been attended with much success.

We use ascending doses of toxin either straight or modified in the prophylaxis of diphtheria and scarlet fever. These produce active, lasting immunity whereas their antitoxin sera renders the child only passively immune for a short time.

With those known causative organisms which do not produce exotoxins we make a vaccine with which to stimulate active immunity. The most successful of these has been the typhoid vaccine, though vaccination against whooping cough and Calmette's B. C. G. promise much. And without knowing the causative organism children are inoculated with the virus of smallpox and rabies.

However, filterable viruses are almost certainly living organisms, bacterial in nature. Most of them confer a high degree of immunity, as smallpox, rabies, measles and mumps, though some produce a very short period of immunity as herpes and the common cold. The latter from the work of Duchey appears quite certainly to be due to a filterable virus. So that the vaccination against colds seems really to be a vaccination against the secondary infections of the common cold virus which in many older children and adults seems to be effective and the cold is frequently said to be aborted. This vaccine is so uncertain both in theory and practice that I think its value in most cases is very doubtful.

Though whooping cough vaccine has been in use for sixteen years there is so much difference of opinion in the literature as to its efficacy, that it is difficult to arrive at a conclusion as to its value. This is very unfortunate since whooping cough causes more deaths than diphtheria, measles, or scarlet fever.

This is evidently due in large part to lack of standard dosage. It appears that good results are generally obtained prophylactically when three doses of first one billion, then one and one-half billion and finally two billion of fresh Bordet-Dengu bacilli either alone or with the influenza bacillus are given on alternate days. I believe that this should be given to all children exposed to whooping cough regardless of their age.

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*Read before the Tennessee Pediatric Association, Memphis, April 11, 1932.

Typhoid vaccination is so universally employed and its value is so unquestionable that little need be said concerning it. The sensitized typhoid vaccine, though more expensive, certainly causes fewer reactions and appears quite as efficacious. Typhoid vaccination is usually begun at about 2 years. This, however, varies with local conditions so that frequently it is better to give it earlier.

Determining the value of B. C. G. (Bacillus Calmette-Guerin) vaccine against tuberculosis requires a very thorough examination of the literature, both in America and abroad. The vaccine when given hypodermically is undoubtedly of great value in immunizing against tuberculosis in the great majority of cases. But the skeleton in the closet is whether it is safe. Most observers think that B. C. G. is perfectly safe, and in France and America it has been given to hundreds of thousands of children but there are a number of keen observers on the other side, notably Petroff, who while granting its efficacy and safety in most cases think that there is enough danger in it for us to confine its use to laboratory animals until its perfect safety is proven.

The history and value of smallpox vaccination are well known. There are a few points, however, still to be considered.

McIntosh of London says that between 1922 and 1929 a hundred deaths were reported due to post-vaccinal encephalitis. This complication has occurred in England much more frequently than in America. Here several cases of post-vaccinal tetanus have been reported. Neither of these complications is due to the vaccine virus but to contamination. With improved technique in the production of the vaccine and in the vaccination both of these complications are becoming quite rare. The vaccination commission of England has strongly recommended using but one short insertion and no dressing. To keep the vaccine potent it must be kept cold. If it is kept very cold it will last long past the expiration date stamped on each package. Babies should be vaccinated and the vaccination repeated on entering school. Vaccination rarely takes well except the first time and the earlier in life this is done the least severe the reaction, as a rule.

Rabies prophylactic inoculation units as put out by various reputable biological houses are so easily administered that any physician who cares to can give them.

Both the rabies and smallpox virus produce a very lasting immunity.

There are but two common diseases of children in which the toxin of the causative bacteria are used prophylactically. These are diphtheria and scarlet fever.

The discovery of diphtheria toxin by Schick and the working out of a practical toxin-antitoxin mixture by Park laid the foundation for this work.

Small ascending doses of the diphtheria toxin itself will bring about active immunity against diphtheria. But this method is too dangerous as the diphtheria toxin is so selective in its action on certain vital organs. So enough antitoxin is added to the toxin to prevent these toxic injuries to the body without hindering the production of active immunity. One objection to the toxin-antitoxin has been the danger of sensitizing the child to the foreign protein bearing the antitoxin. This undesirable feature has been eliminated by treating the toxin with a solution of formaldehyde at 37° for a month or longer. By this method the same results are obtained with the modified toxin without any chance of sensitization. This preparation is called toxoid which is synonymous with Ramons anatoxin. Before marketing, this toxoid must be shown not to possess any toxicity. Toxoid is very resistant to heat, is very stable, and perfectly safe. With the toxoid two inoculations are given three weeks apart and the Schick test is usually found to be negative in eight weeks after the second inoculation. With the toxin-antitoxin three inoculations are given at weekly intervals and a Schick test is made in three or four months.

When the Schick test is correctly made and correctly interpreted to be negative the child as a rule is found to be permanently immune to diphtheria. This is not true of the natural immunity found in 70 per cent of babies before the sixth month of life.

Those who have worked along the same lines with scarlet fever have not had such marked success. In the prophylaxis of scarlet fever the Dick toxin, which is the streptococcus culture filtrate, is very efficient in bringing about active immunization but in so doing frequently produces rather alarming reactions. The anatoxin (or toxoid) is not nearly so efficient. The doses of toxin given have varied widely. The amounts recommended by the Department of Health of Michigan which seems to have done a great deal along this line are 500, 3,500 and 30,000 skin test doses given two weeks apart. A skin test dose is a 0.1 cc. of a 1:1000 dilution of the Dick toxin. Reactions are frequently observed after the first and second doses rarely after the third.

Meader of Detroit gave 450 scarlet fever contacts 7½ cc. each of pooled blood serum from donors who had had scarlet fever within about a year. The serum was given within six months after drawing it. A study of the subsequent history of the contacts showed that 85 per cent were protected compared with a similar group of controls. This immunity, of course, is passive and lasts only 3 or 4 weeks. It may be advisable to thus immunize young children who have been recently exposed.

I do not feel that the prophylaxis against scarlet fever has reached the place where it should be universally recommended.

Measles immunization is so safe and so efficacious that I shall go into some detail concerning it.

The first attempt on record of immunization against measles by the injection of whole blood from a donor who had had measles was by Hone, of Scotland. This was nearly 200 years ago. Then nothing was done until 1916, when Nicolle and Consul, also Park and Zinger reported their results with measles convalescent serum.

Morales gave convalescent serum to 120 children. 85 per cent of these were completely protected. He also gave immune adult serum to 393 children. 58 per cent of these did not develop measles, and those who did develop measles had it in a very attenuated form. The amount of convalescent serum which he used varied from 4 to 6 cc. and the immune adult serum from 10 to 40 cc.

His tables show that doses of 20 cc. or more of immune adult serum were apparently as efficacious as convalescent serum for complete protection. Of more than 500 to whom he gave serum, only 2 showed any reaction, these two had a slight fever and an urticarial rash. None of his control group had a mild form of measles. No complications occurred in the immunized group, while several of the non-immunized group developed pneumonia, two of them dying.

In a review of some 1150 children who were immunized by various workers I found the results with the two types of sera were approximately thus:

Of those who received the convalescent serum, 80 per cent were completely immunized, and 20 per cent developed modified measles, the dose of the serum ranging from 4 to 6 cc.

Of those receiving immune adult serum, nearly 50 per cent were completely protected, and a little over 50 per cent developed modified measles. Those in whom there was no modification make up less than 1 per cent.

There is some disagreement as to what is the proper dose, and when it should be given, but this is not as important as it might at first appear.

Peterson states that 5 cc. of serum for a child of 5 or under, and 10 cc. for over 5 years of age is the best average dose. This convalescent serum should be obtained 10 to 12 days after the initial appearance of the rash. If it is injected intramuscularly not later than the 4th day after an exposure it will confer a passive immunity of from 6 to 10 weeks. The serum will probably retain its potence from 3 to 6 months if kept in a refrigerator.

Billings and Dickson state that for complete protection a minimum of ½ cc. per pound of body weight be given on or before the 4th day after exposure.

Park and Freeman as a result of their experience with 1500 children consider 6 cc. of convalescent serum for a child less than 3 years of age, or 6 to 10 cc. for a child over 3 sufficient to protect them in most cases, or if this fails, to at least cause the case to be mild.

If whole blood is given, twice as much has to be given as of the serum. The technique is very simple. Twice the amount of blood is drawn as serum needed. This is put in a sterile container for 12 to 24 hours to clot, at the end of which time the serum is removed and injected intramuscularly. The physician should be assured that the donor is in good health and that there is no danger of transmitting syphilis, tuberculosis, or malaria. This is usually easily determined when serum is gotten from one of the parents.

From the review of the literature and my observation of cases which I have seen it seems to me that immune serum in some form should be given to children under 5 years of age who have been definitely exposed to measles; and I believe that the most practical method and the most satisfactory permanent results can be obtained by giving 2 cc. of immune adult serum for each year of age so that the child will probably develop a very attenuated form of measles and yet thru active immunization have protection for life.

A COMPARATIVE STUDY OF CERTAIN XANTHINE DIURETICS*

(A PRELIMINARY REPORT)**

THEOPHYLLINE CALCIUM SALICYLATE AND THEOBROMINE CALCIUM SALICYLATE

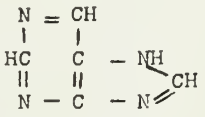
A. RICHARD BLISS, JR.,† M.D. *and* ROBERT W. MORRISON,‡ Memphis

INTRODUCTION

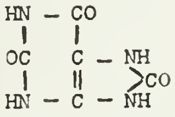
THIS INVESTIGATION was prompted by many inquiries concerning the diuretic properties of the newer Theophylline and Theobromine derivatives, such as Theophylline Calcium Salicylate, Theobromine Calcium Salicylate, and Theophylline Sodium Acetate. The literature shows that no reliable quantitative clinical experiments on the relative diuretic action of the various Xanthine derivatives in graduated doses have been reported; that there are no reports in the English and French literature concerning the effects produced in animals by graduated doses of the newer Theophylline and Theobromine derivatives; and that there is but one quantitative report in the German concerning these newer remedies and their effects on the laboratory animal. This paper is the first of a series of reports on comparative studies of the diuretic properties of Theophylline and its derivatives Theophylline Calcium Salicylate (*"Phyllicin"*) and Theophylline Sodium Acetate (*"Theocin Soluble"*), and Theobromine and its derivatives Theobromine Calcium Salicylate (*"Theocalcin"*) and Theobromine Sodium Salicylate (*"Diuretin"*).

Caffeine, Theobromine and Theophylline are methyl xanthines, derived from Xanthine by the introduction of two or three methyl radicals into a corresponding number of NH groups. As these methyl groups may occupy various positions in the Xanthine nucleus, a considerable number of methyl xanthines exist, either naturally or by synthesis. Although Xanthine itself, $C_5H_4N_4O_2$, has very little diuretic action and is of no practical therapeutic value, certain compounds which contain the Xanthine nucleus, and in which two or more of the hydrogens are replaced by methyl groups, are among the most powerful diuretics known. All of the dimethylxanthines are diuretic, and Theobromine (3.7. dimethylxanthine) and Theophylline (1.3. dimethylxanthine) are the most active. Of the trimethylxanthines Caffeine (1. 3. 7. trimethylxanthine) is the most active.

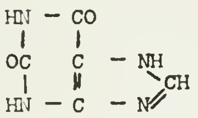
FORMULAE



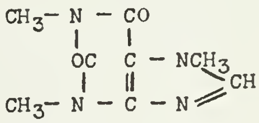
Purin, $C_5H_4N_4$



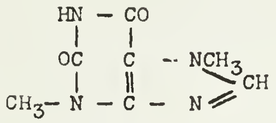
Uric Acid, $C_5H_4N_4O_3$



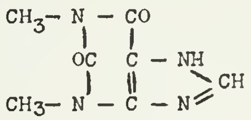
Xanthine, $C_5H_4N_4O_2$



Caffeine, Trimethylxanthine.



Theobromine



Theophylline

Because of the fact that Caffeine is a very weak base, its salts are decomposed by water, and their solutions have a strong acid reaction. Consequently, its simple salts, including the citrate, are not suited for hypodermic injection, and certain double salts, which are freely soluble and neutral in reaction, such as Caffeine Sodium Benzoate and Caffeine Sodium Salicylate came into vogue for hypodermic use. In spite of the fact that Caffeine is one of the most reliable and one of the least injurious, with the exception of water, of all of the diuretics, the central effects of this drug, together with its habit-forming proclivity, stimulated interest in and investigation of the diuretic possibilities of its relatives Theobromine and Theophylline.

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*From the Division of Pharmacology, College of Medicine, University of Tennessee.

**Presented before the Annual Meeting of the Tennessee State Medical Association, Memphis, April 14, 1932.

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Caffeine has been largely supplanted as a diuretic by Theobromine and Theophylline which are credited generally with a much more powerful action, and which produce less of nervous side actions. Many consider Theobromine to be more certain in action and less apt to excite disagreeable nervous symptoms, although some claim that it is irritating to the kidneys.

Theophylline is considered more prompt in producing diuresis than Caffeine or Theobromine, but its effects are supposedly of shorter duration. It, too, has little or no central stimulating action, but the drug is thought to be more irritating to the renal epithelium, and also to the stomach in certain individuals. Following large dosage, dogs and, to a less extent, rabbits at times show alterations in the renal epithelium, and local irritation of the stomach when given orally.

All three of the agents, Caffeine, Theobromine, and Theophylline, may fail to increase the secretion of urine if there is no excess of water in the tissues, as with rabbits which have been kept for a long time on a dry diet; but most animals on a normal diet, and with normal or not too badly damaged kidneys, will show a marked increase in the amount of urine excreted even when relatively small doses of these drugs are administered. In short, these diuretics hasten the excretion of excess water (1).

However, it has been found that no diuresis may occur, following the administration of Caffeine, even when water is at the disposal of the experimental animal. In 1886 Schroeder (2) demonstrated that Caffeine invariably produces diuresis in rabbits provided the nerves going to the kidneys are first sectioned, or Paraldehyde or Chloral Hydrate are administered first to the animals, measures which this investigator believed prevented an interfering vasomotor stimulation. In the dog diuresis is always obtained if the kidneys are denervated or the vasomotors paralyzed, and section of the vagus nerves results in increased diuresis, or induces it when absent. This has lead to the conclusion that the vagus nerves carry inhibitory fibers for the secretory cells of the dog's kidneys, and that Caffeine stimulates those fibers (3). Theobromine, however, does not stimulate these vagus fibers, and produces diuresis even when the nerves are intact (4).

Wallace and Pellini (5) found that dogs on a fixed food and water intake not only failed to show a diuretic effect when Caffeine, Theobromine, Theophylline, and "Diuretin" were administered, but on the contrary showed a decided drop in the daily urine output, often to one-half the normal amount, the Sodium Chloride as well as water being decreased. The explanation offered is that there is a shift of water and salt from the circulating blood into the tissues, and that the action of Caffeine in bringing this about is to produce a dilatation and increased permeability of capillaries in the splanchnic organs and muscles, this action overshadowing the kidney action in animals in water balance. The diuretic action appears when there is an excess of water in the body, or when the tissues give off some of their stored water.

Theobromine has less central stimulating action than Caffeine, but its effects on the kidney are generally stated as being practically identical with those of Caffeine. Solis-Cohen and Githens (6) state that it differs from Caffeine in not stimulating the vasomotor and inhibitosecretory nerves of the kidney, and consequently produces diuresis constantly in dogs and rabbits. Because of the practical insolubility of Theobromine in water, double salts, such as Theobromine Sodium Salicylate and Theobromine Sodium Acetate ("Agurin"), have been employed widely. Sasaki (7) found that continued administration of Theobromine increased water excretion only when rabbits are fed on wet food; but that the chloride excretion is increased also on dry food, i. e., independently of the diuresis.

Hellin and Spiro (8) found that Caffeine fails in glomerular and general nephritis, but is effective in pure tubular nephritis. These investigators report that Theobromine and especially Theophylline are more effective. Schlayer and Hedinger (9), and Pearce, Hill and Eisenbrey (10) confirmed these findings. This is considered by some as important evidence that the diuretic action of Caffeine is exerted on the glomerular circulation and filtration, and not on the tubular epithelium.

Sollmann and McComb (11) state that ordinary doses of Caffeine do not appe to produce demonstrable injury, even in nephritic subjects, but that larger doses may increase albuminuria. They consider the continued use of Theophylline even in moderate doses inadvisable. Pouchêt and Chevalier (12) claim that large doses of Theophylline injure the glomerular and tubular epithelium. Emerson (13) saw no increase of albumin in acute or chronic nephritis under Theobromine. Chevalier (14) reported toxic impurities in some commercial samples of Theobromine. Miller (15) believes that Theobromine and Theophylline may cause renal and gastric irritation.

Vieth and Leube (16), working with rabbits, found 0.190 Gm. of Theobromine, 0.230 Gm. of "Diuretin", 0.280 Gm. of "Theocalcin", and 0.150 Gm. of "Phyllicin" the most effective daily doses of these agents, and concluded that of the acid groups introduced in position 1 of the Theobromine molecule, only the acetyl group increased diuresis. They found that Nitrotheobromine produces a good diuretic effect, but is likely to irritate the kidneys. The assumption of Bürgi (17) that the diuretic possibilities of these Xanthine derivatives are enhanced by salts was confirmed by these investigators with the salicylates. They showed, by using "Theocalcin" and "Phyllicin", that diuresis may be influenced by Calcium in rabbits if the metal is combined with Salicylic Acid, "Phyllicin" exhibiting unusual diuretic powers.

Stewart (18) found Theobromine Calcium Salicylate less irritating to the stomach of human patients than Theophylline and Theobromine Sodium Salicylate; and that the drug may be given daily for months without the occurrence of untoward symptoms. Selig (19) is the only writer who has published reports concerning the effect of Theobromine Calcium Salicylate on the volume of urine excreted by man. He found it induced diuresis.

ANIMAL EXPERIMENTATION

The series of experiments herewith reported were carried out on adult rabbits which were kept on a complete and balanced diet determined for the individual animal. The daily water-intake was carefully controlled. The animals were housed in individual metabolic cages. New animals were used for each dose series. Before beginning the administration of the drugs, the animals were observed over a period of days to establish whether they were in a state of metabolic equilibrium. The drugs, in aqueous solution or mixed with water, were administered three times a day (morning, noon, and evening) by stomach tube over a period of four days, and the observations continued thereafter until the daily output approached that of the premedication period. The daily observations included the total volume of urine voided, the determination of the physical characteristics of the urine, reaction, specific gravity, total solids, Uric Acid, Urea, Albumin, Sugar, and microscopic examination.

RESULTS

The tables which follow give the observations made and the results obtained in this series of experiments with Theobromine Calcium Salicylate and Theophylline Calcium Salicylate.

The first table (Table VII) represents the type of daily record which was kept for each individual animal.

Tables 1 through 8 give the averages of the "Phyllicin" results obtained with from four to seven animals for the premedication, the medication, and the postmedication periods; the doses of the drug ranged from 10 mgm. to 150 mgm. per Kilo three times a day.

Tables A through G give similar data for "Theocalcin", the doses ranging from 10 mgm. to 400 mgm. per Kilo three times a day. In these two groups of tables the volume and the day of the maximum 24-hour urine output during the medication period are presented as the third value among the data for each animal; thus, in Table 1 the maximum 24-hour output was 133 cc. on the fourth medication day.

TABLE VII.—DIURETIC EFFECTS OF CERTAIN XANTHINES ON RABBITS
UNIFORM FLUID INTAKE: 150 CC. DAILY. DRUG GIVEN ON 5TH THRU 8TH DAYS.

Animal No.	Drug and Dose gm. t. i. d.	Day	Total Daily O'put	Color Turb. React.	S/G:	Total Solids Gm. p. cc.	Uric Acid Gm. p. L.	Urea Gm. p. cc.	Albumin Gm. p. L.	Sugar %:	Microscopic	Other Abnormalities
7		1	55	y/s/al	1.013	0.030	0.17	0.024	0.25	neg.	neg.	neg.
	NORMAL	2	60	y/m/al	1.014	0.033	0.17	0.016	0.25	neg.	neg.	neg.
	Premedication	3	88	y/m/al	1.015	0.035	0.18	0.014	0.25	neg.	neg.	neg.
		4	41	y/m/al	1.012	0.027	0.19	0.024	0.25	neg.	neg.	neg.
	AVERAGES:		61	y/m/al	1.014	0.031	0.18	0.019	0.25	neg.	neg.	neg.
		5	143	a/s/ac	1.014	0.033	0.17	0.018	0.2	neg.	neg.	neg.
	PHYLLICIN	6	70	a/s/al	1.025	0.057	0.25	0.012	tr.	neg.	neg.	neg.
	20 mg. per kilo.	7	70	y/m/al	1.018	0.042	0.25	0.014	tr.	neg.	neg.	neg.
		8	85	y/m/al	1.014	0.033	0.24	0.014	0.2	neg.	neg.	neg.
	AVERAGES:		92	a y/sm/al	1.018	0.041	0.23	0.017	0.1	neg.	neg.	neg.
		9	70	y/s/ac	1.016	0.037	0.17	0.015	0.1	neg.	neg.	neg.
	POST-	10	85	y/s/al	1.014	0.033	0.14	0.012	0.3	neg.	neg.	neg.
	Medication	11	55	y/m/al	1.012	0.027	0.12	0.012	tr.	neg.	neg.	neg.
		12	59	y/m/al	1.012	0.027	0.12	0.010	0.2	neg.	neg.	neg.
	AVERAGES:		67	y/sm/al	1.013	0.030	0.14	0.012	0.15	neg.	neg.	neg.

y=yellow.
a=amber.
d=dark.
s=slight turbidity.
m=moderate turbidity.
n=neutral.
l=light.
al=alkaline reaction.
ac=acid reaction.
c=clear.
h=heavy turbidity.

TABLE 1.—DIURETIC EFFECTS OF 10 MGM. PHYLLICIN p. k., t. i. d.
RABBITS. FLUID INTAKE 150 CC. DRUG GIVEN FOR 4 DAYS.

Animal	Day	Daily O'put	Color etc.	S/G	Solids Gm. p. cc.	Uric Gm. p. L.	Urea Gm. cc.	Albumin	Other Abnor.
9	Pre.	94	y/s/al	1.014	0.033	0.18	0.018	0.23	. . . .
	Med.	116	y/s/ac	1.010	0.023	0.25	0.012	0.12	. . . .
	Mx 4″.	133							
	Post	102	a/s/al	1.015	0.033	0.15	0.013	0.15	. . . .
10	Pre.	90	y/s/al	1.013	0.031	0.13	0.013	0.18	. . . .
	Med.	96	y/s/ac	1.014	0.036	0.25	0.015	0.17	. . . .
	Mx 4″.	111							
	Post	89	y/s/al	1.015	0.035	0.19	0.012	0.15	. . . .
11	Pre.	35	y/s/al	1.027	0.062	0.16	0.023	0.35	. . . .
	Med.	56	a/m/ac	1.022	0.050	0.29	0.025	0.46	. . . .
	Mx 2″.	95							
	Post	61	y/s/al	1.020	0.046	0.18	0.016	0.46	. . . .

Animal	Day	Daily O'put	Color, etc.	S/G	Solids Gm. p. cc.	Uric Gm. p. L.	Urea Gm. cc.	Albumin	Other Abnor.
12	Pre.	55	y/s/al	1.016	0.037	0.14	0.015	0.20	....
	Med.	65	y/m/ac	1.018	0.041	0.28	0.027	0.20	....
	Mx 1″	91							
	Post	58	y/s/al	1.019	0.043	0.15	0.017	0.15	....

*Average Increase for Medication Days	27%
*Average Increase for Maximum Days	75%
Average Increase in Uric Acid	125%
Average Increase in Solids	18%

Pre.=premedication period.
Med.=medication period.
Mx 4″=maximum urine output on 4th medication day.
Post=postmedication period.
*=increase in volume of urine output.

TABLE 2.—DIURETIC EFFECTS OF 20 MGM. PHYLLICIN p. k., t. i. d.

Rabbits. Fluid Intake 150 cc. Drug Given for 4 Days.

Animal	Day	Daily O'put	Color etc.	S/G	Solids Gm. p. cc.	Uric Gm. p. L.	Urea Gm. cc.	Albumin	Other Abnor.
5	Pre.	90	y/s/al	1.011	0.023	0.13	0.013	0.14	....
	Med.	109	y/s/ac	1.012	0.026	0.29	0.012	0.21	....
	Mx 1″	118							
	Post	88	y/s/al	1.016	0.036	0.17	0.014	0.45	....
6	Pre.	77	y/s/al	1.021	0.049	0.13	0.022	0.21	....
	Med.	88	a/s/ac	1.016	0.037	0.25	0.017	0.31	....
	Mx 1″	125							
	Post	100	y/s/al	1.012	0.026	0.12	0.017	0.12	....
7	Pre.	61	y/s/al	1.014	0.031	0.18	0.019	0.25	....
	Med.	92	y/s/ac	1.018	0.041	0.23	0.017	0.10	....
	Mx 1″	143							
	Post	67	y/s/al	1.013	0.030	0.14	0.012	0.15	....
8	Pre.	43	y/s/al	1.014	0.026	0.17	0.013	0.30	....
	Med.	84	y/m/ac	1.015	0.036	0.24	0.017	0.19	....
	Mx 1″	105	(Mx 4″	107)					
	Post	35	y/s/al	1.018	0.041	0.18	0.021	0.35	....

Average Increase for Medication Days	45%
Average Increase for Maximum Days	93%
Average Increase in Uric Acid	140%
Average Increase in Solids	73%

TABLE 3.—DIURETIC EFFECTS OF 40 MGM. PHYLLICIN p. k., t. i. d.

Rabbits. Fluid Intake 150 cc. Drug Given for 4 Days.

Animal	Day	Daily O'put	Color, etc.	S/G	Solids Gm. p. cc.	Uric Gm. p. L.	Urea Gm. cc.	Albumin	Other Abnor.
1	Pre.	106	y/s/al	1.010	0.021	0.09	0.013	0.10	....
	Med.	117	y/s/ac	1.013	0.028	0.23	0.012	0.17	....
	Mx 4″	132							
	Post	106	a/s/al	1.012	0.027	0.09	0.011	0.12	....

Animal	Day	Daily O'put	Color etc.	S/G	Solids Gm. p. cc.	Uric Gm. p. L.	Urea Gm. cc.	Albumin	Other Abnor.
2	Pre.	46	ay/s/al	1.020	0.046	0.13	0.021	0.32	....
	Med.	98	y/s/ac	1.012	0.027	0.26	0.014	0.23	....
	Mx 4″	123							
	Post	68	y/s/al	1.017	0.039	0.125	0.017	0.47	....
3	Pre.	97	y/s/al	1.014	0.033	0.12	0.015	0.13	....
	Med.	113	y/c/ac	1.010	0.023	0.18	0.012	0.09	....
	Mx 4″	145							
	Post	98	a/s/al	1.012	0.026	0.12	0.012	0.16	....
4	Pre.	76	y/s/al	1.014	0.032	0.14	0.016	0.19	....
	Med.	109	y/s/ac	1.013	0.031	0.24	0.015	0.13	....
	Mx 3″	140							
	Post	80	y/s/al	1.010	0.021	0.10	0.011	0.10	....

Average Increase for Medication Days 43%
Average Increase for Maximum Days 81%
Average Increase in Uric Acid 184%
Average Increase in Solids 23%

TABLE 4.—DIURETIC EFFECTS OF 50 MGM. PHYLLICIN p. k., t. i. d.
RABBITS. FLUID INTAKE 150 CC. DRUG GIVEN FOR 4 DAYS.

Animal	Day	Daily O'put	Color, etc.	S/G	Solids Gm. p. cc.	Uric Gm. p. L.	Urea Gm. cc.	Albumin	Other Abnor.
13	Pre.	39	y/s/al	1.011	0.024	0.14	0.012	0.12	....
	Med.	107	y/s/ac	1.011	0.026	0.40	0.013	0.10	....
	Mx 1″	135							
	Post	61	y/s/al	1.011	0.024	0.13	0.015	0.07	....
14	Pre.	93	y/s/al	1.010	0.025	0.15	0.012	0.27	....
	Med.	127	y/s/ac	1.010	0.023	0.44	0.013	0.15	....
	Mx 1″	145							
	Post	88	y/s/al	1.010	0.023	0.15	0.018	0.3	....
15	Pre.	80	y/s/al	1.014	0.032	0.13	0.019	0.26	....
	Med.	93	y/s/ac	1.017	0.040	0.43	0.018	0.14	....
	Mx 1″	137							
	Post	76	y/s/al	1.014	0.026	0.15	0.011	0.10	....
16	Pre.	56	a/s/al	1.022	0.049	0.13	0.023	0.16	....
	Med.	95	y/s/ac	1.018	0.043	0.31	0.019	0.05	....
	Mx 1″	160							
	Post	82	y/s/al	1.017	0.031	0.15	0.017	0.06	....

Average Increase for Medication Days 74%
Average Increase for Maximum Days 140%
Average Increase in Uric Acid 395½%
Average Increase in Solids 79%

TABLE 5.—DIURETIC EFFECTS OF 60 MGM. PHYLLICIN p. k., t. i. d.
RABBITS. FLUID INTAKE 150 CC. DRUG GIVEN FOR 4 DAYS.

Animal	Day	Daily O'put	Color etc.	S/G	Solids Gm. p. cc.	Uric Gm. p. L.	Urea Gm. cc.	Albumin	Other Abnor.
4	Pre.	70	a/s/al	1.021	0.048	0.23	0.025	0.31	....
	Med.	136	y/s/ac	1.012	0.026	0.27	0.011	0.17	....
	Mx 1″	215							
	Post-missing								
5	Pre.	47	a/s/al	1.019	0.043	0.21	0.019	0.25	....
	Med.	98	y/s/ac	1.018	0.042	0.31	0.013	0.18	....
	Mx 1″	168							
	Post-missing								
6	Pre.	56	y/s/al	1.015	0.034	0.20	0.017	0.20	....
	Med.	133	y/s/ac	1.011	0.024	0.23	0.010	0.11	....
	Mx 1″	165							
	Post	62	y/s/al	1.012	0.021	0.14	0.015	0.17	....
10	Pre.	72	a/s/al	1.021	0.049	0.19	0.027	0.30	....
	Med.	143	y/s/ac	1.015	0.034	0.30	0.012	0.18	....
	Mx 1″	170							
	Post	111	y/s/al	1.012	0.028	0.12	0.011	0.10	....
11	Pre.	64	a/s/al	1.020	0.045	0.15	0.019	0.28	....
	Med.	120	y/s/ac	1.014	0.034	0.28	0.013	0.24	....
	Mx 1″	180							
	Post	77	y/s/al	1.012	0.026	0.22	0.012	0.27	....
12	Pre.	75	a/s/al	1.019	0.043	0.19	0.026	0.21	....
	Med.	158	y/s/ac	1.013	0.031	0.33	0.012	0.14	....
	Mx 1″	187							
	Post	75	y/s/al	1.014	0.031	0.22	0.011	0.30	....

Average Increase for Medication Days	106%
Average Increase for Maximum Days	188%
Average Increase in Uric Acid	223%
Average Increase in Solids	86%

TABLE 6.—DIURETIC EFFECTS OF 75 MGM. PHYLLICIN p. k., t. i. d.
RABBITS. FLUID INTAKE 150 CC. DRUG GIVEN FOR 4 DAYS.

Animal	Day	Daily O'put	Color, etc.	S/G	Solids Gm. p. cc.	Uric Gm. p. L.	Urea Gm. cc.	Albumin	Other Abnor.
1	Pre.	41	y/s/al	1.017	0.041	0.125	0.017	0.25	....
	Med.	78	y/s/ac	1.018	0.042	0.30	0.020	0.20	....
	Mx 2″	95	(1″ 92)						
	Post	86	y/s/al	1.013	0.030	0.155	0.0165	0.21	....
2	Pre.	46	y/s/al	1.017	0.040	0.19	0.015	0.19	....
	Med.	75	y/s/ac	1.021	0.049	0.45	0.022	0.18	....
	Mx 3″	90							
	Post	61	y/s/al	1.013	0.030	0.17	0.016	0.19	....
3	Pre.	71	y/s/al	1.015	0.033	0.20	0.016	0.17	....
	Med.	94	y/s/ac	1.010	0.022	0.25	0.011	0.15	....
	Mx 1″	110							
	Post	89	y/s/al	1.012	0.029	0.18	0.015	0.27	....

Animal	Day	Daily O'put	Color, etc.	S/G	Solids Gm.p.cc.	Uric Gm. p. L.	Urea Gm. cc.	Albumin	Other Abnor.
7	Pre.	93	y/n/al	1.016	0.037	0.13	0.018	0.34	....
	Med.	156	ly/s/ac	1.014	0.034	0.30	0.020	0.50	....
	Mx 7″	165							
	Post	114	dy/s/al	1.018	0.041	0.19	0.024	0.27	....
9	Pre.	41	a/m/al	1.022	0.049	0.20	0.019	0.17	....
	Med.	130	y/s/ac	1.016	0.037	0.32	0.013	0.22	....
	Mx 4″	150							
	Post	89	dy/s/al	1.011	0.024	0.20	0.011	0.17	....

Average Increase for Medication Days---------- 94%
Average Increase for Maximum Days---------- 125%
Average Increase in Uric Acid---------- 280%
Average Increase in Solids ---------- 94%

TABLE 7.—DIURETIC EFFECTS OF 100 MGM. PHYLLICIN p. k., t. i. d.

RABBITS. FLUID INTAKE 150 CC. DRUG GIVEN FOR 4 DAYS.

Animal	Day	Daily O'put	Color, etc.	S/G	Solids Gm.p.cc.	Uric Gm. p. L.	Urea Gm. cc.	Albumin	Other Abnor.
4	Pre.	52	da/s/al	1.021	0.049	0.23	0.018	0.12	....
	Med.	99	a/s/ac	1.017	0.040	0.55	0.014	0.25	....
	Mx 1″	131							
	Post	55	y/s/al	1.010	0.023	0.14	0.010	0.04	....
5	Pre.	45	a/s/al	1.018	0.041	0.18	0.014	0.11	....
	Med.	105	y/m/ac	1.014	0.033	0.65	0.010	0.13	....
	3 days only								
	Mx 1″	109							
			Animal	Died 4th	Med. Da	y			
6	Pre.	43	da/s/al	1.023	0.053	0.18	0.019	0.17	....
	Med.	82	y/s/ac	1.019	0.045	0.58	0.018	1.45	....
	Mx 1″	143							
	Post	45	a/s/al	1.012	0.027	0.14	0.012	0.15	....

Average Increase for Medication Days---------- 105%
Average Increase for Maximum Days---------- 176%
Average Increase in Uric Acid----------537½%
Average Increase in Solids ---------- 68%

TABLE 8.—DIURETIC EFFECTS OF 150 MGM. PHYLLICIN p. k., t. i. d.

RABBITS. FLUID INTAKE 150 CC. DRUG GIVEN FOR 4 DAYS.

Animal	Day	Daily O'put	Color, etc.	S/G	Solids Gm.p.cc.	Uric Gm. p. L.	Urea Gm. cc.	Albumin	Other Abnor.
1	Pre.	138	y/m/al	1.009	0.021	0.10	0.012	0.13	....
	Med.	128	y/s/ac	1.016	0.037	0.11	0.012	0.05	S 0.75
	1 day		Died Sec	ond Med.	Day				
1 A	Pre.	76	a/m/al	1.017	0.040	0.24	0.019	0.15	....
	Med.	87	a/m/n	1.025	0.058	0.46	0.021	0.28	....
2	Pre.	78	dy/m/al	1.016	0.037	0.10	0.019	0.15	M ct.

Animal	Day	Daily O'put	Color, etc.	S/G	Solids Gm. p. cc.	Uric Gm. p. L.	Urea Gm. cc.	Albumin	Other Abnor.
	Med.	116	y/s/ac	1.010	0.023	0.25	0.010	0.05	S 0.4
			Died Second Drug Day						
2 A	Pre.	95	a/m/al	1.016	0.037	0.26	0.015	0.15	
	Med.	62	y/m/n	1.024	0.056	0.72	0.016	0.18	
3	Pre.	64	ly/s/al	1.017	0.040	0.10	0.016	0.12	
	Med.	116	la/m/ac	1.014	0.033	0.11	0.010	0.10	S 1.5
			Died Second Drug Day						
3 A	Pre.	76	la/m/al	1.022	0.051	0.41	0.016	0.25	
	Med.		Died First Med. Day						S 0.5
4	Pre.	120	dl/s/al	1.011	0.026	0.10	0.013	0.10	M ct.
	Med.	153	y/s/ac	1.008	0.019	0.10	0.004	n	S 1.4 M ct.

Diuretic Range from —34% to + 81%.

Average Increase in Uric Acid	100%
Average Increase in Solids	27%

TABLE A.—DIURETIC EFFECTS OF 10 MGM. THEOCALCIN p. k., t. i. d.

Rabbits. Fluid Intake 150 cc. Drug Given for 4 Days.

Animal	Day	Daily O'put	Color, etc.	S/G	Solids Gm. p. cc.	Uric Gm. p. L.	Urea Gm. cc.	Albumin	Other Abnor.
5 M	Pre.	65	y/m/al	1.012	0.029	0.125	0.018	0.08	
	Med.	94	y/s/ac	1.017	0.038	0.28	0.021	0.05	
	Mx 1″	80							
	Post	41	y/m/al	1.018	0.041	0.17	0.014	0.20	
6 M	Pre.	91	y/s/al	1.012	0.026	0.12	0.016	0.12	
	Med.	115	y/m/ac	1.018	0.042	0.28	0.015	0.10	
	Mx 1″	138							
	Post	82	y/s/al	1.018	0.041	0.16	0.018	0.10	
7 M	Pre.	65	y/m/al	1.014	0.033	0.12	0.012	0.10	
	Med.	130	y/s/ac	1.010	0.023	0.25	0.012	0.04	
	Mx 2″	143							
	Post	48	y/s/al	1.023	0.054	0.17	0.026	0.21	
8 M	Pre.	65	y/m/al	1.016	0.038	0.14	0.019	0.4	
	Med	117	y/s/ac	1.013	0.029	0.18	0.018	0.24	
	Mx 1″	205							
	Post	76	y/m/al	1.014	0.034	0.17	0.015	0.20	

Average Increase for Medication Days	61.5%
Average Increase for Maximum Days	110.0%
Average Increase in Uric Acid	217.0%
Average Increase in Solids	67.0%

TABLE B.—DIURETIC EFFECTS OF 30 MGM. THEOCALCIN p. k., t. i. d.

RABBITS. FLUID INTAKE 140 CC. DRUG GIVEN FOR 4 DAYS.

Animal	Day	Daily O'put	Color, etc.	S/G	Solids Gm.p.cc.	Uric Gm. p. L.	Urea Gm. cc.	Albumin	Other Abnor.
1 M	Pre.	98	y/s/al	1.012	0.023	0.09	0.012	0.075	....
	Med.	116	y/s/ac	1.012	0.026	0.23	0.012	0.05	....
	Mx 1″	129							
	Post	100	y/s/al	1.010	0.021	0.15	0.010	tr.	....
2 M	Pre.	69	y/m/al	1.017	0.040	0.12	0.024	0.20	....
	Med.	79	y/s/ac	1.017	0.039	0.32	0.026	0.04	....
	Mx 1″	117							
	Post	64	y/m/al	1.015	0.034	0.21	0.013	0.04	....
3 M	Pre.	86	y/s/al	1.010	0.022	0.11	0.012	0.11	....
	Med.	100	y/s/ac	1.012	0.028	0.24	0.010	0.11	....
	Mx 1″	167							
	Post	117	y/s/al	1.013	0.025	0.15	0.015	0.08	....
4 M	Pre.	71	y/s/al	1.010	0.021	0.12	0.011	0.11	....
	Med.	100	y/m/ac	1.014	0.027	0.22	0.012	0.10	....
	Mx 1″	155							
	Post	82	y/s/al	1.010	0.022	0.15	0.013	0.025	....

Average Increase for Medication Days	22%
Average Increase for Maximum Days	78%
Average Increase in Uric Acid	180%
Average Increase in Solids	44%

TABLE C.—DIURETIC EFFECTS OF 50 MGM. THEOCALCIN p. k., t. i. d.

RABBITS. FLUID INTAKE 150 CC. DRUG GIVEN FOR 4 DAYS.

Animal	Day	Daily O'put	Color, etc.	S/G	Solids Gm.p.cc.	Uric Gm. p. L.	Urea Gm. cc.	Albumin	Other Abnor.
21	Pre.	55	y/s/al	1.019	0.049	0.22	0.011	0.14	....
	Med.	107	y/s/ac	1.015	0.036	0.27	0.019	0.11	....
	Mx 1″	163							
	Post	75	y/s/al	1.012	0.028	0.18	0.016	0.16	....
22	Pre.	46	y/s/al	1.016	0.036	0.12	0.016	0.21	....
	Med.	77	y/s/ac	1.014	0.033	0.22	0.015	0.20	....
	Mx 1″	115							
	Post	67	y/s/al	1.014	0.032	0.13	0.013	0.17	....
23	Pre.	32	y/m/al	1.028	0.055	0.17	0.018	0.18	....
	Med.	77	a/s/ac	1.017	0.038	0.22	0.017	0.05	....
	Mx 1″	157							
	Post	45	y/s/al	1.019	0.043	0.15	0.014	0.20	....
24	Pre.	49	y/s/al	1.022	0.052	0.14	0.015	0.21	....
	Med.	91	y/s/ac	1.016	0.037	0.22	0.014	0.32	....
	Mx 4″	100							
	Post	79	y/s/al	1.015	0.035	0.16	0.014	0.25	....

Average Increase for Medication Days	97%
Average Increase for Maximum Days	210%
Average Increase in Uric Acid	187½%
Average Increase in Solids	48½%

TABLE D.—DIURETIC EFFECTS OF 75 MGM. THEOCALCIN p. k., t. i. d.
RABBITS. FLUID INTAKE 150 CC. DRUG GIVEN FOR 4 DAYS.

Animal	Day	Daily O'put	Color, etc.	S/G	Solids Gm. p. cc.	Uric Gm. p. L.	Urea Gm. cc.	Albumin	Other Abnor.
17	Pre...........	87	a/s/al	1.021	0.049	0.14	0.018	0.25	....
	Med..........	118	ya/s/ac	1.014	0.033	0.31	0.018	0.70	....
	Mx 3″........	150							
	Post—Lost								
18	Pre...........	76	y/s/al	1.012	0.026	0.12	0.011	0.16	....
	Med..........	81	y/s/ac	1.016	0.036	0.25	0.019	0.17	....
	Mx 4″........	105							
	Post..........	55	y/s/al	1.016	0.037	0.17	0.018	0.21	....
19	Pre...........	71	y/s/al	1.020	0.045	0.15	0.020	0.19	....
	Med..........	104	ly/m/ac	1.016	0.038	0.25	0.016	0.19	....
	Mx 2″........	128							
	Post..........	65	y/s/al	1.015	0.035	0.13	0.020	0.22	....
20	Pre...........	61	y/s/al	1.024	0.055	0.21	0.014	0.30	....
	Med..........	80	y/s/ac	1.020	0.047	0.27	0.016	0.16	....
	Mx 1″........	145							
	Post..........	64	y/s/al	1.017	0.039	0.17	0.021	0.26	....

Average Increase for Medication Days	30%
Average Increase for Maximum Days	82%
Average Increase in Uric Acid	134%
Average Increase in Solids	19%

TABLE E.—DIURETIC EFFECTS OF 100 MGM. THEOCALCIN p. k., t. i. d.
RABBITS. FLUID INTAKE 150 CC. DRUG GIVEN FOR 4 DAYS.

Animal	Day	Daily O'put	Color, etc.	S/G	Solids Gm. p. cc.	Uric Gm. p. L.	Urea Gm. cc.	Albumin	Other Abnor.
13	Pre...........	50	dy/s/al	1.021	0.049	0.16	0.017	0.19	....
	Med..........	70	y/s/ac	1.018	0.041	0.37	0.021	0.14	....
	Mx 1″........	113							
	Post..........	54	y/s/al	1.011	0.025	0.17	0.016	0.17	....
14	Pre...........	50	y/s/al	1.014	0.033	0.25	0.018	0.20	....
	Med..........	87	y/s/ac	1.017	0.041	0.33	0.016	0.30	....
	Mx 1″........	150							
	Post..........	83	y/s/al	1.013	0.029	0.165	0.014	0.26	....
15	Pre...........	79	y/s/al	1.018	0.043	0.13	0.018	0.21	....
	Med..........	87	ly/s/ac	1.017	0.037	0.36	0.020	0.18	....
	Mx 1″........	133							
	Post..........	81	a/s/al	1.015	0.036	0.18	0.018	0.35	....
16	Pre...........	58	y/s/al	1.022	0.050	0.15	0.019	0.20	....
	Med..........	122	y/s/ac	1.018	0.047	0.32	0.019	0.19	....
	Mx 3″........ 4″...........	145							
	Post..........	54	y/s/al	1.018	0.042	0.14	0.024	0.15	....

Average Increase for Medication Days	58½%
Average Increase for Maximum Days	136%
Average Increase in Uric Acid	227%
Average Increase in Solids	56½%

TABLE F.—DIURETIC EFFECTS OF 150 MGM. THEOCALCIN p. k., t. i. d.
Rabbits. Fluid Intake 150 cc. Drug Given for 4 Days.

Animal	Day	Daily O'put	Color, etc.	S/G	Solids Gm.p.cc.	Uric Gm. p. L.	Urea Gm. cc.	Albumin	Other Abnor.
9–2	Pre.	85	y/s/al	1.015	0.035	0.11	0.016	0.19	....
	Med.	118	y/s/ac	1.018	0.042	0.20	0.014	0.15	....
10–2	Pre.	71	y/h/al	1.013	0.030	0.10	0.014	0.30	M ct.
	Med.	103	y/s/ac	1.017	0.040	0.14	0.008	0.15	S 3.0
			Died Sec	ond Day					M ct. l. wt.
11–2	Pre.	61	y/s/al	1.017	0.040	0.12	0.016	0.10	....
	Med.	102	ly/s/ac	1.016	0.037	0.22	0.014	0.11	S tr. l. wt.
12–2	Pre.	103	y/s/al	1.013	0.030	0.08	0.011	0.10	....
	Med.	89	y/s/ac	1.015	0.035	0.15	0.012	0.11	S tr. l. wt.

Diur. Range from ---------- minus 14% to plus 50%
Average Increase in Uric Acid ---------- 131%
Average Increase in Solids ---------- 54%

TABLE G.—DIURETIC EFFECTS OF 400 MGM. THEOCALCIN p. k., t. i. d.
Rabbits. Fluid Intake 125 cc. Drug Given for 4 Days.

Animal	Day	Daily O'put	Color, etc.	S/G	Solids Gm.p.cc.	Uric Gm. p. L.	Urea Gm. cc.	Albumin	Other Abnor.
1–3	Pre.	50	y/c/al	1.020	0.053	0.21	0.016	0.09	....
	Med.	168	y/s/ac	1.012	0.027	0.13	0.008	0.05	S tr.
				Died Sec	ond Day	on Drug			
2–3	Pre.	65	a/s/al	1.019	0.045	0.16	0.017	0.10	....
	Med.	145	y/h/ac	1.014	0.033	0.10	0.008	n	....
				Died Sec	ond Day	on Drug			
3–3	Pre.	102	y/s/al	1.015	0.035	0.13	0.018	0.12	....
	Med.	92	ly/m/ac	1.014	0.033	0.10	0.008	0.20	S tr.
				Died Sec	ond Day	on Drug			

Diur. Range from ---------- —10% to plus 179½%
Average Increase in Uric Acid ---------- 39%
Average Increase in Solids ---------- 39—%

Tables 1a and 2a present the average percentages of increase and decrease in the urine volume output for the medication periods, the average percentages of increase calculated from the maximum 24-hour urine output during the medication periods, the average percentages of increase in Uric Acid content, the increase in Albumin, the presence of Sugar, the duration of diuretic action, and the days during which the higher 24-hour output occurred.

DISCUSSION

It should be understood that the drugs were not administered until long observation had established that the rabbits were in good balance as determined by intake, output and weight, and that in the experimental work the animals were kept on a fixed daily food and water intake.

From the values in the tables it is obvious that in rabbits:

First—Relatively small doses of "Phyllicin" and "Theocalcin" may produce a good diuresis, an appreciable increase in Uric Acid output, and a diuresis of fair duration.

Second—60 mgm. per Kilo three times a day is the most efficient dose of "Phyllicin", if judged from the standpoint of the increase in the volume of urine output during the medication and the postmedication

TABLE 1a.—EFFECTS OF VARIOUS DOSES OF PHYLLICIN ON RABBITS.

Dose mgm. p. K. tid.	Aver. % Incr'd O'put	Aver. % Incr'd Max. Op.	Aver. % Incr'd Solids	Aver. % Incr'd Uric A.	Incr'd Albumin	Incr'd Sugar	Durat'n Diure's thru	Day (s) Maxim. O'put
10	27	75	18	125	....	....	7½ days	1″, 3″, dg; 2″ post.
20	45	93	73	140	....	....	7 days	1″, 4″, dg; 1″, 2″ pt.
40	43	81	23	184	....	....	7 days	1″, 4″, dg; 2″ post.
50	74	140	79	395½	....	....	9 days	1″, 2″, 3″, dg; 2″, 3″, post
60	106	188	86	233	....	....	7½ days	1″ drug.
75	94	125	94	280	....	....	8 days	1″, 3″, dg.
100	105	176	68	537½	plus	....	8 days	1 ″, drug; 3″ post.
150	—34 to plus 81	....	27	100	4 of 7 animals died on the 1″ or 2″ drug day. Casts in urine: gastrointestinal irritation.			

TABLE 2a.—EFFECTS OF VARIOUS DOSES OF THEOCALCIN ON RABBITS.

Dose mgm. p. K. tid.	Aver. % Incr'd O'put	Aver. % Incr'd Max. Op.	Aver. % Incr'd Solids	Aver. % Incr'd Uric A.	Incr'd Albumin	Incr'd Sugar	Durat'n Diure's thru	Day (s) Maxim. O'put
10	61½	110	67	217½	....	....	7½ days	1″, 2″, 3 dg. day.
30	22	78½	44	180	....	....	6½ days	1″ drug; 2″ post.
50	97	210	48½	187½	....	....	8½ days	1″ drug.
75	30	82	19	134	....	....	7 days	1″, 2,″ 3″ dg. day.
100	58½	136	56½	227	plus	....	7 days	1″, drug.
150	—14 to plus 50	....	54	131	.... 1 animal died 2″ drug day.	plus	....	....
400	—10 to plus 179½	....	39—	39	.... All animals died 2″ drug day.	plus	....	....

Urinary casts and gastrointestinal irritation were observed in all animals that died.

periods and the maximum 24-hour output; but that 50 mgm. doses are most efficient if, in addition to these factors, the increase in Uric Acid eliminated and the duration of diuretic action are considered. These results confirm those obtained by Vieth and Leube (16). It is interesting to note that the average duration of action is almost 8 days (7.7), the minimum being 7 and the maximum 9.

Third—There was no evidence of local irritation with "Phyllicin" until doses of 100 mgm. or more per Kilo three times a day were reached, when the animals began to manifest loss of appetite and diarrhoea, and albumin in the urine. In cases of death, gastroenteritis and renal irritation were observed.

Fourth—In the case of "Theocalcin", 50 mgm. per Kilo three times a day appears to be the most efficient dose from the standpoint of increase in the volume of urine output, maximum 24-hour output, and duration of diuretic action. A maximum Uric Acid output was obtained with 30 mgm. doses. These values are below those obtained by Vieth and Leube (16), who found doses of 280 mgm. per day most efficient. The average duration of action was 7.3 days, the minimum being 6½ days and the maximum 8½ days. Thus, "Phyllicin" shows a slight duration advantage over "Theocalcin". From the standpoint of promptness of diuretic action, these two drugs seem to be about equal, action being obtained in each case on the first drug day. These results are not in agreement with the general statements concerning the relative promptness and the duration of action of these two agents as presented in the Introduction of this paper.

Fifth—With "Theocalcin", irritation became manifested with doses of 100 mgm. per Kilo three times a day, as compared with 100 mgm. of "Phyllicin". As with "Phyllicin", the animals which died showed irritation of the gastrointestinal tract and of the kidneys.

Sixth—With but one exception, (one 100 mgm. "Phyllicin" rabbit died), no deaths occurred with either drug until doses of 150 mgm. or more per Kilo three times a day were given.

Seventh—There is a definite increase, not only in the volume of urine voided under the influence of both drugs, but also in the Uric Acid eliminated. Within what appear to be the more efficient safe doses in rabbits, "Phyllicin" seems to be more powerful in this respect.

What proportion of the Uric Acid eliminated is derived from the drugs themselves, and the extent of the possible role of the Calcium and the Salicylic Acid group in the production of the diuresis have not been determined as yet.

Eighth—Gastrointestinal and renal irritation may be produced by the larger doses of either drug.

The results obtained with Theobromine, Theophylline, Theobromine Sodium Salicylate, and Theophylline Sodium Acetate will be presented in later papers.

BIBLIOGRAPHY

(1) *Loewi:* Arch. exp. Path. Pharm., 53, 374, 1905.
(2) *v. Schroeder:* Centralbl. f. med. Wissensch., 26, 465, 1886. Arch. exp. Path. Pharm., 22, 39; 24, 85, 1886-87.
(3) *Anten:* Arch. intern. Pharmacod., 8, 455, 1901.
(4) *Solis-Cohen and Githens:* Pharmacotherapeutics, 1511, 1928.
(5) *Wallace and Pellini:* Jour. Pharm. and Exp. Ther., 29, 397, 1926.
(6) *Solis-Cohen and Githens:* Pharmacotherapeutics, 1513, 1928.
(7) *Sasaki:* Mitt. Med. Fak. Univ. Kyushu Fakuoka, 6, 129, 1921.
(8) *Hellin and Spiro:* Arch. exp. Path. Pharm., 38, 368, 1897.
(9) *Schlayer and Hedinger:* Deut. Arch. klin. Med., 90, 1, 1907.
(10) *Pearce, Hill and Eisenbrey:* Jour. Exp. Med., 12, 200, 1910.
(11) *Sollmann and McComb:* Jour. Exp. Med., 3, 137, 1898.
(12) *Pouchét and Chevalier:* Bull. Gen. Ther., 146, 615, 1903.
(13) *Emerson:* Johns Hopkins Hosp. Rep., 10, 323, 1902.
(14) *Chevalier:* Bull. Gen. Ther., 167, 599, 1914.
(15) *Miller and Coworkers:* Amer. Jour. Physiol., 52, 28, 1920.
(16) *Veith and Leube:* Biochem. Zeitschr., 163, 18, 1925.
(17) *Burgi:* Ther. d. Gegenw., p. 149, 1925.
(18) *Stewart:* Jour. Clin. Invest., viii, 3, 389, 1930.
(19) *Selig:* Wien. Med. Wchnschr., 76, 895, 1926.

DISCUSSION

DR. J. A. McINTOSH (Memphis): I don't want to let this opportunity go by without saying that this is the first time I have heard this combination in the absence of the author. The only objection that I can see is that no one will be there to answer questions if questions should be asked, so some provision might be made for that.

It seems to me, too, that this method of ascertaining toxicity of any drug is quite useful and certainly gives us much better information about the administration of the drug than we sometimes find outlined in the various books. Some of us have been bold enough to use large doses of various remedies, sometimes producing symptoms of toxemia and sometimes, to our surprise, getting no symptoms of toxemia. In the presentation of the paper I get the idea that now toxicity of the various drugs is studied in such a way that we can be governed by their results.

DR. A. R. BLISS, JR. (Memphis): My major objection to this method of presentation is that I am not really doing the talking, and I do love to talk.

What we wish to stress is the fact that relatively small doses of these agents are capable of producing a good diuresis, a diuresis that lasts over a fair period.

The second point is that the amount of uric acid is increased from about 100 to something over 500 per cent. At the present stage of our study we are not going to attempt to offer any explanation for the increase in uric acid output, but by the time we have completed the four other drugs in this group we hope to have some explanation to offer.

THE GENERAL USE OF RADIATION THERAPY*

W. R. BETHEA, M.D., AND H. D. GRAY, M.D., Memphis

THE general use of radiation therapy can best be demonstrated by a recent check of 12 years experience in radiation therapy, especially x-ray therapy. In this check there were 122 conditions and 2,902 cases treated. For lack of time, only a brief summary naming the conditions, the number of each, and the results, will be attempted. For convenience in discussion, the subject is divided into 13 subheads.

CARCINOMA GROUP, composed of 905 cases, parts of body affected as follows:

Hand, 1 case, treated late, after metastasis, with no result.

Ca. of Eye: 14 cases, 4 improved, 8 no results, and 2 no report. Some relief from pain received from treatment, but otherwise treatment of little value.

Ca. of Lip and Face: 26 cases, 7 good results, 3 improved, 5 no results, 11 no report. Results warrant radiation therapy on such cases.

Ca. of Lower Jaw: 12 cases, 2 good results, 2 improved, 4 no results, 4 no report. Results only fair.

Ca. in Mouth: 17 cases, 1 good result, 1 improved, 8 no results, 7 no report. Results very poor from x-ray alone.

Ca. of Antrum: 3 cases, 2 no results, 1 no report. Treatment retarded the condition in most cases and relieved pain, but proved to be of no curative value.

Ca. of Neck and Tonsils: 7 cases, 3 good results, 1 improved, 3 no report. Treat early and with heavy radiation and results will be fair.

Ca. of Parotid: 4 cases, 1 good results, 3 no results. Procedure justifiable.

Ca. of Thyroid: 2 cases, 2 good results. Both cases arrested to date.

Ca. of Larynx: 15 cases, 1 good results, 1 improved, 12 no results, 1 no report. Some retarding of symptoms and relief from pain were results obtained in most cases.

Ca. of Bronchi: 1, no results. Probably of no curative value.

Ca. of Lung: 3, 2 no results, 1 no report. Very little can be expected from radiation therapy.

Ca. of Breast: This includes both pre- and post-operative cases: 258 cases, 64 good results, 25 improved, 98 no results, 71 no report. Procedure justifiable, both in pre- and post-operative cases.

Ca. of Esophagus: 3 cases, 3 no results. All die and show little improvement.

Ca. of Stomach: 26 cases, 1 good results, 1 improved, 24 no results. Some delay in progress noted from treatment. One case apparently recovered. Remainder showed no results.

Ca. of Colon: 22 cases, 2 good results, 4 improved, 15 no results, 1 no report. Progress in the disease has been delayed and much comfort obtained in the cases treated.

Ca. in Appendix: 1, no results.

Ca. of Rectum: 19 cases, 3 good results, 3 improved, 6 no results, 7 no report. Results are worth time and effort.

Ca. of Abdomen: 16 cases, 2 improved, 13 no results, 1 not reported. All cases late and probably extensions from other sources. Treatment worth very little.

Ca. of Liver: 3 cases, 2 good results, 1 no result. Results worth the effort.

Ca. of Pancreas: 1 case, no result.

Ca. of Inguinal Glands: 1, no result.

Ca. of Ovaries: 17 cases, 4 good results, 1 improved, 9 no improvement, 3 no report. Procedure justifiable.

Ca. of Uterus: 74 cases, 11 good results, 6 improved, 36 no results, 21 no report. Early treatment will show much better results than shown in these cases.

Ca. of Cervix: 160 cases, 23 good results, 18 improved, 43 no results, 76 no report. The high number with no report, in both carcinoma of uterus and cervix, is due to many cases now under treatment. With the present higher voltage much better results are being shown than in former cases.

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*Read before the Tennessee State Medical Association, Memphis, April 12, 13, 14, 1932.

Ca. of Vulva: 3 cases, 1 improved, 2 show no results. All cases treated late.

Ca. of Prostate: 38 cases, 7 good results, 5 improved, 25 no results, 1 not reported. Procedure is justifiable.

Ca. of Ureter: 1 case, no result.

Ca. of Kidney: 6 cases, 1 good result, 5 no results. While the results are poor, procedure is justifiable.

Ca. of Testicle: 3, 2 good results, 1 no results. Results are justifiable.

Ca. of Bladder: 31, 1 good results, 1 improved, 21 no results, 8 no report. Results very poor from radiation.

Ca. of Penis: 8 cases, 2 improved, 6 no results. No cases responded very well.

Ca. in Bone: 2 cases, 1 good result, 1 no report. Insufficient cases to estimate value.

Epithelioma: 107 cases, 57 good results, 20 improved, 13 no results, 17 not reported. Condition should be treated early and results can be expected.

SARCOMA GROUP, composed of 132 cases:

Ewing's Tumor: 4 cases, 1 good results, 3 not reported. General treatment on Ewing's Tumor shows early improvement.

Endothelioma: 8, 3 good results, 3 improved, 2 no results. Results very satisfactory.

Sarcoma of Testicle: 3 cases. Cases treated after metastasis and no results.

Sarcoma of Bladder: 1 case, no results obtained.

Fibro-sarcoma: 12 cases, 2 good results, 5 improved, 4 no results, 1 no report. Early and heavy radiation well worth the effort.

Osteo-sarcoma: 50 cases. Some of these cases were later classed as Ewing's tumor. 8 good results, 1 improved, 37 no improvement, 4 no report. Results poor and surgery may be responsible for the 8 cases with good results.

Lympho-sarcoma: 42 cases, 16 good results, 10 improved, 8 no results, 8 no report. Responds well to radiation if seen early and radiated rather heavily.

Myxo-sarcoma: 9 cases, 2 good results, 1 improved, 6 no results. Results only fair in this type.

Spindle Cell Sarcoma: 4, 3 good results, 1 no report. Apparently one of the most responsive types of sarcoma.

Meleno-sarcoma: 8. Two of the 8 cases were of the eye. 1 good result, 1 improved, 4 no results, 2 unreported. Procedure is worth the effort.

Chloroma: 1 case, no results. Cases insufficient for conclusion.

BENIGN TUMORS—106 CASES

Granuloma: Only 1 case treated. Due to variable causes of granulomas radiation is not recommended without first determining nature of cells.

Myxoma: 2 cases, 1 good result, 1 no result. Number insufficient for conclusion.

Dermoid Cyst: 1 case treated with no results. Dermoid cysts are not thought to be radiation sensitive.

Desmoid Tumor: 1 case. Number insufficient for conclusion.

Bone Syphilis: Only 1 case, no results.

Osteo-chondroma: 5 cases, no results. Condition not radiation sensitive.

Bone Cyst: 11 cases, 2 good results, 9 not reported. Radiation has some effect.

Moles: 6 cases, 3 good results, 2 no results, 1 not reported. Simple moles respond in small percentage of cases. Some do not respond and unable to tell why.

Sublingual Cyst: 1, fairly good results. Insufficient cases for conclusion.

Hodgkins Disease: 13 cases, 9 showed improvement, 4 showed no improvement. Practically all cases will show temporary improvement but glands usually return.

Fibroid Tumor: 32, 26 good results, 2 improved, 2 no results, 2 no report. Condition should be properly diagnosed and uncomplicated cases belong to x-ray alone.

Parotid Cyst: 1, good results. Number insufficient for conclusion.

Papilloma of Colon: 3, 2 with good results, 1 improved. Cases insufficient for conclusion.

Warts: 14 cases, 6 good results, 4 no results, 4 no report. Some cases respond very readily, especially the spreading type.

Xanthomatosis: 3 cases, 1 improved, 2 showed no improvement. Insufficient cases for positive conclusion, but condition is thought probably radiation sensitive.

Angiomatous Birthmarks: 5, 3 good results, 2 no report. Results worth the effort.

Venereal Warts: 2 cases, 1 with good results, 1 no report. Treat early if results expected.

Prostatis Hypertrophy: 4 cases, 2 good results, 1 improved, 1 no report. Insufficient cases for positive conclusion.

TUBERCULAR CONDITIONS
(26 Cases)

Tubercular Peritonitis, chronic: 5 cases, 4 good results, 1 improved. Treatment well worth while.

Tubercular Fistula in Anol: 1, no results. Insufficient cases.

Tubercular Adenitis: 20 cases, 10 good results, 5 improved, 2 no results, 3 no report. Condition responds fairly well to radiation.

BRAIN TUMOR GROUP
(33 Cases)

Brain and Cord Tumors: 33, 10 good results, 6 improved, 12 no results, 5 no report. All cases treated in connection with surgery and thought well worth the effort.

SKIN INFECTIONS
(153 Cases)

Exfoliative Dermatitis: 1 case, improved. Cases insufficient for conclusion.

Eczema: 55 cases, 32 good results, 12 improved, 4 no improvement, 7 unreported. Results good in true form. Reflex allergic types should not be treated.

Acne: 12, 8 good results, 3 improved, 1 no report.

Seborrhea: 2 cases, 1 good result, 1 not reported. Cases insufficient for conclusion.

Keratosis: 30, 16 good results, 7 improved, 7 no report. Condition responds very nicely to x-ray.

Keloids: 30 cases, 3 good results, 18 improved, 2 no results, 7 not reported. It is best radiated early and reduce size of scar and bleach the area.

Corns on Feet: 23, 8 good results, 12 improved, 1 no result, 2 no report. Results well worth the effort.

FEMALE GENERATIVE ORGANS AND GLANDULAR CONDITIONS
(358 Cases)

Acromegalia: 3 cases, 1 with very good results, 2 improved. In children and during the growing stage, stimulating doses over the pituitary give excellent results.

Mastitis: 39 cases, 31 good results, 4 improved, 4 no report. Results very satisfactory.

Endometritis: 1 case. Insufficient cases for conclusion.

Menorrhagia: 53 cases, 40 good results, 5 improved, 8 no report. Good method of treatment, but be sure of diagnosis before proceeding.

Hyperthyroidism: 80 cases, 24 good results, 10 improved, 3 no results, 43 no report. The results are worth the effort in treatment. The high number of cases with no report is due to the fact that a number of cases were treated and as soon as symptoms subsided were operated. Frequent metabolic checks should be kept on results.

Thymic Glands: 182 cases treated, 138 good results, 18 improved, 10 no results, 16 no report. Treatment is recommended in all cases with very large gland and all cases with symptoms. Treatment should be very carefully guarded and with small dosage.

CHRONIC CONDITIONS
(101 Cases)

Chronic Empyema: 3 cases, 1 good result, 1 no result, 1 not reported. Insufficient cases for conclusion.

Parotid Fistula: 1 case, with good results. Results worth the effort.

Chronic Ulcers: 6 treated, 2 good results, 2 improved, 1 no improvement, 1 no report. In excessive granulations radiation is well worth using to destroy such granulations.

Chronic Arthritis: 10 cases, 5 improved, 3 no improvement, 2 no report. Results hardly justifiable.

Chronic Sinusitis: 30, 4 good results, 10 improved, 2 no results, 14 no report. Procedure is hardly justifiable.

Catarrhal Deafness: 50 cases, 12 good results, 17 improved, 13 no results, 8 no report. Results well worth the effort in cases where there is no bony sclerosis. Symptoms are exaggerated in this type.

Chronic Colitis: 1 case, no results. Insufficient cases for conclusion.

FUNGUS INFECTIONS
(66 Cases)

Ringworm: 24, 22 good results, 2 improved.

Fungus Infection of Feet: 30 cases, 21 good results, 5 improved, 4 no report.

Actinomycosis: 5 cases, 3 good results, 1 improved, 1 no result.

Blastomycosis: 7 cases, 4 good results, 2 no results, 1 no report. All fungus cases, in accessible areas, respond very well to radiation.

RESPIRATORY GROUP
(39 Cases)

Asthma: 1 case, no results. Insufficient for conclusion.

Laryngitis: 1 case. Insufficient for conclusion.

Whooping Cough: 37 cases, 34 improved, 2 no results, 1 no report. Radiation lightens the attack, but does not shorten the attack or does not cure the whooping cough.

ACUTE CONDITIONS
(716 Cases)

Neuritis: 41 cases, 11 good results, 13 improved, 6 no results, 11 no report. Results well worth the effort.

Tonsils: 5 cases, 2 good results, 1 improved, 2 no results. Radiation is not recommended unless surgery is contraindicated.

Pruritus Ani and Vulva: 10 cases, 7 good results, 3 improved. Results justify the procedure although the condition frequently recurs.

Otitis Media: 1 case, results good. Insufficient for conclusion.

Mastoiditis: 38 cases, 16 good results, 12 improved, 5 no improvement, 5 no report. Results can be expected if treatment is instituted before necrosis in the cell structure. If there is necrosis radiation should not be used.

Granular Conjunctivitis: 1 case, good results. Treatment of such conditions prior to this case, with good results, prompts conclusion that it is a good method.

Erysipelas: 11 cases, 10 good results, 1 no result. Treat early and cover the entire lesion if possible.

Cellulitis: 15 cases, 3 good results, 11 improved, 1 no report. Results well worth the effort.

Boils and Carbuncles: 78 cases, 48 good results, 11 improved, 3 no results, 16 no report. If treated early very satisfactory results are obtained.

Paronychia and Onychia: 3 cases, 2 some improvement, 1 no improvement. Insufficient experience for conclusion.

Lymph Adenitis: (Majority of cases cervical), 513, 387 good results, 35 improved, 53 no results, 38 unreported. This condition responds readily to x-ray and it is thought well to treat all cases, even though suppuration has taken place. Liquefaction is more complete.

BLOOD DYSCRASIAS
(31 Cases)

Polycythemia: 4, 4 improved. All cases show improvement and much comfort. None thoroughly recover.

Leucemia: 18, 9 improved, 7 no results, 2 no report. Treatment should be instituted as early as possible and done very cautiously. Check by frequent blood counts. Life can be prolonged over many years in most cases.

Aleucemic Leucemia: 2 cases, no results in either. Cases treated late.

Agranulo Cytosis: 7 cases, 1 good results, 5 no results, 1 no report. The one case with good results was treated early, the others very late.

MISCELLANEOUS
(236 Cases)

Amoebiasis: 8 cases, 1 good result, 2 improved, remainder no report. Radiation is not recommended.

Stimulation of Kidneys During Acute Suppression: 1 case, good results. Cases insufficient for conclusion.

Tularemia: 2 cases, 1 good result, 1 improved. Condition is thought to respond to radiation. Insufficient cases for positive conclusion.

Cases of Unfinished Treatment and

Questionable Diagnosis: 225. Most cases sent for radiation have been treated by other methods and are late cases, therefore comfort and a few added years is all that can be obtained.

CONCLUSIONS

Many malignancies treated early may be arrested. Late malignancies are made more comfortable in most instances and life may be prolonged from a few months to several years.

Benign tumors that are radiation sensitive usually respond readily to radiation.

Brain and cord tumors may be arrested and life prolonged for several years.

Tubercular adenitis and peritonitis respond well. X-ray therapy is not recommended in pulmonary tuberculosis.

Most skin conditions respond fairly well where allergy is excluded.

Uncomplicated glandular conditions and conditions of the uterus respond fairly well.

Chronic conditions should be carefully selected as many do not respond to radiation.

Fungus conditions respond readily when treated early.

Whooping cough is benefited more than any other condition in the respiratory group.

Many acute conditions respond rapidly to radiation.

Blood dyscrasias are improved but not cured by radiation and life is prolonged in cases treated early.

The more recent use of higher voltage is producing better results.

DISCUSSION

DR. S. S. MARCHBANKS: In the carcinoma group I have gotten most satisfactory results in the treatment of carcinoma of the dorsum of the hand by the combination of fulguration with radiation. These are often difficult cases. In the treatment of carcinoma of the lip and face, I think I have had somewhat greater percentage of good results, but, of course, this can only mean that I got them earlier. In the balance of the carcinoma group my results are just about the same.

In the sarcoma group my experience has been most unsatisfactory, though with more hope in the lymphosarcoma. Apparently one case of sarcoma of the apex of orbit was cured, but the patient died of nephritis which he had had for several years prior to the sarcoma. However, he lived about 18 months.

In tubercular conditions, tuberculous adenitis and peritonitis respond well and radiation is the treatment of choice.

In all the skin cases mentioned the results are so satisfactory that we could not get along without radiation.

In hyperthyroidism I find that about 50 per cent are definitely relieved of symptoms and get well; and of the thymus gland cases, 75 to 80 per cent are completely relieved.

Fungus diseases are just simply not satisfactorily treated without radiation and this pretty well applies to boils and carbuncles.

Breast malignancies, in my opinion, should be primarily surgical, though I think no such case is properly treated unless it be given the benefit of radiation, both before and after operation.

In uterine malignancies, especially of the cervix, to the contrary, surgery is becoming more and more contraindicated, leaving this field to radiation by radium and x-ray combined, and we are getting better and better results as our experience grows and the educational work is carried on among the laity. When we can get these cases in the early stage we can hope to get more than double the present number of five year cures.

Finally, let me say that the prettiest work that is done by radium and x-ray is in the relief of those distressing cases of uterine hemorrhage caused by fibroids and endocrine dysfunctions, and this applies almost as strongly to the fibroids as well.

DR. W. T. BLACK (Memphis): I wish to commend the amount of work that Dr. Bethea has spent upon this paper and to commend some of his splendid results. There are only two or three things that I wish to speak about. First, I wish to speak about venereal warts. The only venereal warts that I see are around the introitus or up in the vagina of the female. Here electrocoagulation will melt them away like snow in the sunshine, and I wonder how he would treat these vaginal venereal warts.

As to carcinoma of the cervix, I was not aware of the fact that any man was treating carcinoma of the cervix now exclusively with x-ray, because it is the consensus of opinion all over the world, I think, that radium is the proper treatment for carcinoma of the cervix, of course, to be followed up by deep x-ray therapy. Carcinoma of the body of the uterus is purely a surgical condition (best precede operation with radium), but if they come late and the pathology is so marked that you cannot remove the uterus, then of course x-ray treatment as well as radium is indicated.

In fibroid tumors of the uterus I think it is seldom that you see a case that should be treated by x-ray, and certainly no case should be treated with x-ray unless it has gone through the hands of a very competent man to exclude complications. We average about five large fibroid tumors a week in the Memphis General Hospital—operative cases—and in the work that I do there I have seen only one uncomplicated case in the last three or four years, and that case was about the size of a six months' pregnancy, which is probably a little larger than is usually advocated for the use of x-ray. In private practice you see them earlier without complications, and there is no doubt that x-ray will cure a certain per cent of them, but I would have to be thoroughly convinced first, in a young woman, that the ovaries were not destroyed by the use of the x-ray. My judgment is that surgery (hysterectomy) is preferable to the use of x-ray treatments in the young woman under thirty-five years of age, because you do not want to destroy her ovaries, and it is much better to take out the uterus and leave in the ovaries. If he can shrink up this tumor and cure it without interfering with the function of the ovaries, that is a different proposition, but I doubt that.

DR. W. S. LAWRENCE (Memphis): I should like to offer the same criticism that Dr. Black offered, namely, that Dr. Bethea tried to scatter his blessings a little too widely. I take it, however, that this covers a great deal of work that was done years and years ago. There are a great many conditions that Dr. Bethea listed that we now know the x-ray is not indicated in at all, and so we don't use it.

Dr. Bethea has a very charming and emphatic way of presenting things, and he drew some conclusions in that manner which possibly I think, if you would notice, are hardly based upon a sufficient number of cases. He called attention to that, too, but sometimes first impressions take the place of the second ones and are more lasting.

In carcinoma of the lip, there are several types of this condition that he mentioned that I cannot go over because there are so many, but his results hardly coincide with mine as to the number of cures that can be obtained and the results in general. In particular I was struck with carcinoma of the lower lip which he said responds "fairly" well. It has been four years since I have seen a case of primary carcinoma of the lip that hasn't gotten well, and so far as I know stayed well. I think it is one of the most promising conditions that we have to treat. The ray must be highly filtered—I don't mean high voltage—and the glands must be treated. Treated anything like early, that is before palpable glandular involvement has taken place, the results are way over the percentage that he gave.

Referring to Dr. Bethea's report and also Dr. Black's discussion on the matter of fibroids, fibroids past the age of thirty-eight, I think, are the type that Dr. Bethea meant to talk about. I don't think that he has been treating young women with fibroids. I would be very much opposed to that myself and I think he is, too. In older women where the menopause will be reached very shortly, if you want to cure the patient in a "meek and gentle manner," it can be done by radiation. I remember a couplet from somewhere about the Kentucky colonel who was disputing with a man:

> He reached up behind his neck
> And drew him out a knife,
> And in a meek and gentle manner
> Took the colonel's life.

I think Dr. Bethea didn't intend to do what Dr. Black attributed to him—treat carcinoma of the cervix by x-ray entirely, but by radiation derived from x-ray and from radium.

I should like to suggest to Dr. Black that the institute that does this work better than any other in the world, the Curie Institute in Paris, begins all cases on x-ray, with this understanding, that the disease is one that is either spreading or most likely to spread. The x-ray will control the outposts of the disease; radium will not, I don't care how much of it you give. If it is spread over an inch beyond the uterine canal, radium will not control it, so they begin at the Curie Institute on high voltage x-ray, and they treat them for two weeks with rather mild doses, but they thoroughly saturate the pelvis with x-ray for two weeks. The patient is very much improved in a general way if there is any general involvement, and then they give radium for about two weeks longer; highly filtered through gold or platinum applicators, the T-shaped applicator, and they are getting over 50 per cent of the run-of-mine results at the Curie Institute in Paris.

There is one type of wart that Dr. Bethea did not mention, I think. I was struck with its omission. That is the plantar wart. There is no wart that is anything like as incapacitating and in which the morbidity is greater than the plantar wart. It puts one out of commission to have a bad plantar wart. The x-ray is a specific for these warts, and it is the only sensible way, I believe, to treat them.

DR. W. R. BETHEA (Closing): As to venereal warts, the cases of venereal warts that we have treated had been fulgurated already and the growth returned. We have had only a few cases. I think other methods of treatment should be attempted first, then if they continue to return after cauterization or fulguration, radiation will be very efficacious in preventing the further return of these warts. Both of our cases were male.

For lack of time, as I stated in the beginning, I did not go into detail on any of the conditions reported. As for carcinoma of the cervix, I think most of our cases have been treated in connection with radium. It is our opinion that both radium and x-ray should be used.

Carcinoma of the body of the uterus sometimes becomes inoperable and we are called on there to use radium and x-ray, and we have one case to my gratification that is alive and doing well now after about eight years and is practically free from carcinomatous symptoms.

I expected to hear from the statement about fibroids. You understand that I said uncomplicated fibroids of a certain size. I don't think there is any question but that x-ray is the method of choice of all treatment in those cases. I don't hesitate to say that the younger cases should be treated with x-ray rather than surgery. If the dosage is properly graduated, ovarian function will not be damaged permanently, and only for a very short time if at all. Ovarian tissue is much more resistive than fibroid tissue. It is true that it should be cautiously done in all cases.

In the paper just read, how many cases of intestinal obstruction were shown from post-operative adhesions? So far as I know, we have no post-operative x-ray obstruction, and that is one thing to be thought of; also the surgical mortality that may occur in any major operation. Besides, you are destroying a uterus that may sometime be the result of some life. I think in all cases we should have very careful diagnosis, however.

The cases reported are widespread because we have been asked so often what radiation is worth in a certain condition. In the conditions where no results were obtained the conditions were not radiation sensitive and radiation is not recommended in such cases.

Plantar warts were included in warts. I could not go into the differentiation of the location of warts and the types, but plantar warts have responded to radiation.

So have soft corns on the feet. That may be comforting to some of you.

I thank you for the discussion and for the privilege of giving the paper.

MIGRAINE, WITH SPECIAL REFERENCE TO CERTAIN MODIFICATIONS

W. H. WITT, M.D., Nashville

SICK headache, bilious headache, migraine, hemicrania, are terms used to connote a group of symptoms that have been recognized from a remote period in medical history, though apparently not described by Hippocrates. Many outstanding members of our profession have been sufferers from this distressing trouble and have left remarkably clear descriptions of the attacks.

The definition of migraine naturally varies some with the different authors who have written on the subject. I take as a sample that given in the Oxford Medicine. Migraine is there defined as "an affection characterized by paroxysmal attacks in which a distinctive type of headache, usually unilateral, is the most constant feature, commonly accompanied by nausea and vomiting and often preceded by some sensory disturbance, especially visual."

I would modify this definition and make it read as follows: "A familial affection characterized by paroxysmal attacks in which headache—often unilateral—is the most constant feature, commonly accompanied by nausea and vomiting and commonly preceded by sensory phenomena, especially visual, and in a good proportion of cases preceded by great hunger and a corresponding sense of well being." This antecedent sense of well being is often described by sufferers from migraine.

The Oxford Medicine also adds, "Migraine is a much more common affection than is usually supposed. The paroxysmal character is the most characteristic feature of all the symptoms."

My thesis is to defend these last two statements—bearing on the commonness of the trouble and the essential importance of the periodical element in the attacks—and so to broaden the definition as to lead to its more frequent diagnosis. I shall also try to adduce evidence of certain modifications or equivalents of migraine that are not commonly recognized. I shall try to maintain that the headache—even when unilateral—is not distinctive, and that, after all is said, the paroxysmal character and certain phenomena connected with the vegetative nervous system are the essential features of this very interesting affection. It is obvious that if one is too much impressed with the unilateral feature of the headache, or fails to inquire into the periodicity of attacks—the patient being well between them—or fails to bring out the fact that the patients' forbears, particularly on the maternal side, suffered with similar attacks, the true nature of many cases will be overlooked and the cause of the trouble will be looked for in pathological states in various organs—including the brain itself—but more particularly in the eye or in the nasal and paranasal sinuses. It is, however, fair to say that there may be a puzzling periodicity in the headaches of Bright's Disease, brain tumor, and other organic lesions. Periodic headaches after middle life should especially be studied for such causes.

At this point, I shall say nothing as to the fundamental causes of migraine except that physicians for centuries have proposed one hypothesis after another—many of them highly fanciful and none of them acquiring universal acceptance. I shall say something later of some modern ideas of etiology.

Apart from the fundamental cause or causes, there is also much difference of opinion as to just what physical changes occur that lead to the great variety of symptoms. In other words, what is the actual physical mechanism of an attack. The hypothesis that vaso-motor changes are the immediate causes of the symptoms has gained wide acceptance and appears to me to come nearer explaining all the varied manifestations than any other assumption. To what extent other functions of the vegetative nervous system operate is of interest, but even those are probably largely conditioned by the variations in local blood supply as modified by over or under activity of the vasomotor control. For instance, the paresthesia, mental confusion, the partial aphasia, the hemiparesis, the blindness, the polyuria, salivation, well established but uncommon features, can be best explained on such a basis. That one or the other temporal artery is at first contracted and later dilated in an attack has been attested as proven by a number of observers. The early blanched facies, to be followed later by suffusion, corroborates this idea. The so-called abdominal types—referred to later—seem not so easily explained on the vaso-motor theory, but in them there are other expressions of vegetative nerve dysfunction, especially spasm.

Text book descriptions of typical attacks of any disease, or syndrome, whether pneumonia, typhoid fever, poliomyelitis, or anything else is open to serious criticism—they leave so much to learn about modified attacks and the surprises that attend them. An ordinary attack of migraine is preceded in nearly all instances by some sensory phenomena which the patient, if he is observant, learns to recognize and to evaluate. These symptoms vary much—the more common ones being a sense of chilliness, a numbness, general or localized, at times affecting one arm or leg or one entire side, probably associated with difficulty of speech or other motor function. One of my patients usually has a rather severe pain in her right big toe premonitory to a definite attack.

A sense of mental or physical depression are common antecedents, generally recognized, but it is not so well known that a sense of well being and especially a sense of great hunger may foretell an attack. It is this last that I wish particularly to stress. In fact, I am disposed to think that fully one-third of migraine patients have a preceding hunger. In such a case how easy it is to assume that over-eating was the cause of the attack, instead of just an attendant phenomenon. As to the antecedent sense of well being, Gowers makes a positive statement as to its frequency. One of my patients uses such an occasion to clean up the cellar and the attic.

The eye symptoms that may precede or attend an attack of sick headache are very varied and in many instances not full of meaning to an examiner. The common scotomata—spots before the eyes, the zig-zag lines, with or without color, the photophobia are all well known and need no special mention. It is more important to remember that there may be blurred vision, half vision, blindness, paralysis and other ocular phenomena that are not in some instances followed by headache and probably not by vomiting. Their real nature may be overlooked unless their transient nature and their periodicity are given due weight.

Patients with such eye phenomena alone or with paresthesia or anesthesia of an extremity alone or an aphasia may easily fear a paralytic stroke and need the reassurance that can only come with a proper diagnosis. The great variety of motor and sensory phenomena of cerebral origin described in monographs on this subject constitute interesting reading and serve to remind us that the phenomena of migraine are exceedingly varied and show us how easily we are misled if we adhere too closely to a conception of the so-called typical attack.

Abortive attacks, particularly those not followed or attended by a headache, may easily be misinterpreted. Not all physicians would call such attacks equivalents or variations of migraine, but Gowers and other authorities do not hesitate to so classify them and Bramwell of Edinburgh has recently stressed such a kinship.

The headache of migraine attacks is not of itself diagnostic. It may be mild and temporary. It may be severe and prolonged for days. It may be unilateral or bilateral. It may be occipital or frontal. It may be localized to a very small area particularly in the temporal region. Statistics as to location have been frequently compiled and individual subjects have interested themselves in noting the variation of location in their own experience. Many have experienced the pain in all the favorite locations at different times. In some patients it alternates from one temple to the other in successive attacks. *It is the association of headache with other phenomena and the history of periodicity* that leads to a differentiation from other headaches, not 'the character of the headache alone and not its location. Gowers has particularly insisted that the word migraine is to be employed as a term for paroxysmal headaches in general and that no matter where located they are apt to be preceded by similar sensory symptoms and may lead to vomiting. Henschen (quoted by Jelliffe) in 123 patients found the pain located on one side in 56, on both sides in 67; 54 had pain in the occiput. The location varied some in different attacks.

Another feature that may lead to a failure of classification is the great variety of phenomena that any one patient may present. The frequency of attacks in the same individual is very variable. Jelliffe speaks of a patient that he had under observation for 15 years. At one period he had two attacks a week for a year. He then went two years without a single attack, and he then had several severe ones with aphasia and psychic symptoms interspersed with abortive attacks and hardly any two alike. Jelliffe comments on our indebtedness to sufferers, some of whom have made very detailed accounts of their symptoms and have learned, from inside information, to group many temporary and abortive attacks as expressions of their favorite malady. One patient left a history of 168 attacks in a period of ten years. One hundred were classed as abortive—usually scotomata alone or other sensory phenomena. Of the other 68, many were not typical attacks, some with and some without scotomata and other eye symptoms.

The purely psychic features, especially those of anxiety and depression, are common enough, varying, of course, much in different individuals. Some of these precede the headache. The headache itself is often so severe as to in itself cause certain psychic phenomena.

Among the vagaries of occurrence may be mentioned the well known fact that migrainous attacks commonly cease during and probably for weeks or months after an attack of typhoid fever or other similar disease. These facts are on a parallel with the behavior of an asthmatic when a pneumonia or other infection supervenes—that is, the asthma promptly subsides. Such occurrences, of course, tend to confirm the very general professional observations that the two conditions often alternate in a family and even in the same individual and probably have similar etiology.

The influence of heredity is a factor that has appealed very differently to different investigators—some laying great stress on a family history and others minimizing its importance. Some degree of nerve instability in the family is more generally accepted. Without having any definite statistics it occurs to me that practically all patients that I have questioned and who had known the family history have said there was migraine—and generally the mother was the sufferer. Furthermore, the fact that a migrainous patient may exhibit various evidences of an unstable nervous system should not be allowed to mislead us as to those periodic symptoms that are so much a part of the migraine of more stable people. If we think we can cure such people of their migrainous symptoms by improving their living conditions and modifying their social contacts we will be disappointed.

The relation of nausea and vomiting to migraine is full of interest. Commonly they occur minutes or hours after the onset of the headache, and, at times, usher in a prompt recovery. In some cases of undoubted migraine, there is neither nausea or vomiting. In other cases, there are varied sensory phenomena followed by nausea and vomiting and no headache. These are rather rare and unless the history is carefully taken would not be classed as migraine; simply a food disturbance.

An uncommon but undoubted variety is that in which practically all the symptoms are abdominal—mostly nausea and vomiting—and no headache supervenes. It is such attacks as these that I wish particularly to call attention to. They come periodically —that is, at varying periods. They come rather suddenly in the midst of good health. They last a few hours or a day or two. They rather quickly subside, leaving the patient free of symptoms, and probably with a good appetite and good digestion. They may be accompanied by a sense of deep-seated pain. It is this latter that has greatest weight in leading to a diagnosis of an abdominal pathology such as gall bladder or appendix. Such cases have been reported by several observers, particularly in the last ten years, and I am sure I have seen three or four instances of this syndrome. Some have come later in life after a previous history of more typical migraine. A woman of 52 was seen quite recently. Apart from typical attacks of migraine she had had for 25 years attacks of nausea and vomiting, but no pain and no headache. There were visual phenomena with these, and they were preceded by great hunger. In spite of the evident nature of these attacks she had had two major abdominal operations with, of course, no relief. I confess that in any individual attack this diagnosis may not appear reasonable, and in case of doubt, I should lean to a diagnosis of a surgical lesion. But if the story includes one or more previous attacks, and particularly if gall bladder trouble has been eliminated by proper study, I should have little or no hesitation in a diagnosis of an abdominal equivalent of migraine. In a situation like this, the family physician is in a better position to advise than a consulting surgeon —that is, if he has closely observed the previous attacks and has taken the pains to eliminate, so far as possible, a surgical lesion. It is to be remembered, too, that such an attack more closely resembles a gall bladder attack than some of the more urgent conditions, such as appendicitis, and delay with close study is defensible. Alvarez, in last Mayo volume, says, "Quite commonly physicians are so deceived by the presence of nausea, vomiting and abdominal pain that the patient is put to the expense of one or more operations." He also says, "The wise clinician will continue to question the patient until he makes sure that between the attacks there is never indigestion and never an attack without the preliminary headache." I don't think, however, Alvarez is accurate in saying the headache universally precedes. The tragic consequences ensuing on delay in such abdominal conditions as perforated ulcer, intestinal obstruction, acute appendicitis, serve to beget a wholesome fear in conscientious physicians and surgeons, but even so, it is always incumbent to get not only the immediate but the previous history of such patients and similar attacks. The essential elements in the diagnosis are previous similar attacks, accompanying scotomata or other phenomena not normally attending pathological states in the abdomen, freedom from symptoms in the interval and a personal or family history of migraine. Any surgeon that regards every case of acute abdomen as surgical is going to operate on cases of abdominal migraine, gastric crises of tabes, abdominal purpura, functional pylorospasm and probably an occasional case of coronary thrombosis. There are only a few doctors with sufficient personality to operate on the same patient four or five times and each time for a symptom —not a pathology. If such patient sticks to the same surgeon not much harm is done, but if she skips about and still complains of no relief, surgery is discredited.

When we consider how richly the gastro-intestinal tract is supplied with sympathetic nerves, how easy for even normal contractions to rise into the field of consciousness of nervous people and how under conditions of sensitization, and otherwise, even normal persons may have great pain from functional disturbance, it is rather surprising we see no more non-surgical conditions than we do.

It is pertinent here to say that many cases of cyclic vomiting in children are probably in origin similar to migraine and the cyclic child may later be subject to migraine.

Before referring to the more recent theories of migraine as an allergic reaction to foods or other sources, I shall mention some that are older and probably less appealing.

For an indefinite period eye strain has been regarded as a cause and in a discussion before the British Medical Association in 1926, Hurst uses this language: "I have never seen a case of migraine in which some degree of eye strain has not been present, and I have only seen two in which correction of the strain did not cure or greatly relieve the symptoms."

At the same discussion, Bramwell of Edinburgh, said, "Although I am satisfied that eye strain is sometimes an important exciting factor and that correction of refractive error occasionally effects a cure, this in my experience is quite exceptional." I think all writers agree that various pathological states about the eye, sinuses or elsewhere and various state of brain exhaustion or excitation may be the hair trigger that explodes a poorly understood constitutional predisposition.

Timmie, of New York, is quoted in the same discussion by Bramwell as saying that some condition of the pituitary gland is a common cause of migraine—that in time the gland becomes adjusted to its sella and symptoms cease or are greatly modified. Others have regarded this gland as in some way the cause of the trouble. Gordon Holmes, an outstanding British neurologist, discards the pituitary theory and discards the vaso-motor theory of the phenomena of the attack itself, saying the local cause of symptoms is a local swelling and changes in osmosis.

Other ductless glands have been thought by different observers to have some bearing on the phenomena. Viewed as a purely reflex affair, the accessory sinuses and the tonsils have undergone almost as much attack as the eyes and often with temporary benefit. But, as said before, even with no treatment there occur the most inexplicable cessation of attacks.

The similarity of epilepsy and migraine has long been observed. Their essential nature has been urged by some and just as strongly denied by others. At present the ketogenic diet is being put to the test in each condition on the theory of alkalosis and may serve to help in treatment if not in uncovering the fundamental pathology of each. Barborka in the last Mayo Volume reports that he has used this diet in some unusually severe cases and that 30 per cent have been controlled; 50 per cent helped, and 20 per cent not affected.

More recently much attention has been paid to allergy as the underlying cause, especially food allergy, and too, a relation that commonly fails to be diagnosed by sensitization tests. Rowe of California claims that food allergy can be proved to be operative by the so-called elimination diets. He and others claim to have cured or much relieved many migrainous patients by empirical withdrawal of such common foods as wheat, eggs, milk and a few other foods. Indeed many modern writers stress allergy as the underlying cause of migrainous attacks.

But this paper was prepared not to detail theories of causation and not at all to advocate any line of treatment, but to call attention to certain features of migraine that should lead to its more frequent diagnosis. To repeat, I would emphasize especially: (1) *Periodicity of attacks with comfort in the interval.* (2) The hereditary element, which I think is well established. (3) The headache is by no means one-sided —it may be anywhere. (4) The associated phenomena are not visual only but encompass practically every type of sensory or motor manifestation. (5) The nausea and vomiting are not always of minor importance, but may be the only, or, at least, the chief symptoms and may be accompanied with a disturbing degree of abdominal pain, the headache escaping notice or attracting very little attention. (6) Practically all organs supplied by the vegetative nervous system may show evidence of functional disturbance—the kidney, the colon and the salivary glands—and purely psychic symptoms are not rare. (7) Lastly, a great hunger or a sense of well being is a common precedent phenomenon that apprises the victim that an attack is imminent.

It is obvious then that only a detailed history will assure a proper classification of these symptoms and save us the mortification of oversanguine promises from certain therapeutic efforts—surgical, medicinal, or what not.

DIARRHEA: A TROUBLESOME SYMPTOM*

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THE normal stool is solid or semisolid. An evacuation of the bowels once or twice daily or on alternate days is considered normal. Several watery stools daily, with or without other symptoms, are the result of some disturbance in the physiology of the gastro-intestinal tract.

Bassler (3) says, "Diarrhea may ensue from constipation when the long presence of feces acts as an irritant to the mucosa, when increased irritability of the nervous system causes it to respond with unusual vigor to stimulation, and when hyperemic, inflammatory, or ulcered conditions of the mucosa cause increased secretion or transudation."

In general, the etiology of diarrhea may be divided into six main groups:

1. Allergic.
2. Dietetic.
3. Parasitic.
4. Neurogenic.
5. Systemic.
6. Gastro-intestinal.

Allergic Diarrhea.—Recent studies in allergy have proved that many cases of diarrhea are due directly to sensitiveness of individuals to ingested proteins. Henry (6), in a study of 800 allergic persons, found 8 per cent with diarrhea and other abdominal symptoms. It has long been known that eggs, shell fish, and berries commonly cause abdominal pain and diarrhea, and now skin tests by the scratch and intradermal methods show that almost any food may produce a reaction in allergic subjects. Vaughan (13), Rowe (10), and Henry (6) have shown that wheat, eggs, and milk lead the list of foods which cause allergic symptoms. The following case is given as an illustration.

A woman, 33 years of age, complained of frequent attacks of abdominal pain, nausea, vomiting, and profuse, watery stools. At times the attacks were accompanied by a sense of stuffiness in the nose and by headache. Skin tests gave strongly positive reactions to several foods, chief of which was wheat. The elimination of these foods from the diet gave prompt relief. She can induce an attack at will by eating a small quantity of wheat.

Diarrhea caused by food allergy is due to a localized congestion of the intestinal mucosa, similar to the bronchial spasm in bronchial asthma. It is not surprising that smooth muscle spasm, mucous membrane irritation, and edema due to food allergy occur in the intestinal tract, especially in the large bowel, where the food residue frequently remains in contact with the tissues for two or three days. Dorst and Morris (5), in a study of the bacterial flora of the colon, found that, on having skin tests, patients with "irritable colon" often reacted to certain of the ordinary bacterial flora. In the belief that their intestinal irritability was caused by the bacterial toxins of these flora, a large number of these patients were treated by desensitization with autogenous vaccines and by the administration of sodium ricinoleate by mouth. They rapidly improved and the sensitiveness to the skin tests disappeared. This seems a logical approach to the treatment of certain chronic conditions within the colon which are commonly spoken of as spastic colitis; it deserves further trial.

Dietetic Diarrhea.—Chronic diarrhea may be due to an unbalanced diet. Excessive fats and sweets frequently produce diarrhea alternating with periods of constipation. Citrous fruits in large quantities stimulate the intestinal secretions and cause watery evacuations. Green vegetables in abundance may irritate the colon, resulting in diarrhea. Poorly prepared food, or food selected without regard for its vitimin or mineral value often will bring about intestinal disorders, particularly diarrhea.

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*Read before the Tennessee State Medical Association, Memphis, April 12, 13, 14, 1932.

Parasitic Diarrhea.—The effects of parasites on their host are almost as numerous and varied as are the kinds of parasites. The susceptibility of the individual, his physical condition, and complications with other infections all have an influence. It may be said, however, that parasites damage their host in one of three ways: (1) by robbing him of his food; (2) by mechanically injuring the tissues or organs; and (3) by the formation of excretions or toxins which act as poisons.

The more important parasites producing diarrhea in man are Entamoeba histolytica, Bacillus dysenteriae of Shiga and Kruse, and Balantidium coli.

The Entamoeba histolytica was first studied by Lasch (7) in 1875. It is the most prevalent of the alimentary protozoa and its pathogenic activity is known. The parasite, once believed existent only in the tropics, is widely distributed in the United States. Its natural habitat in the human body is the colon, which it enters through the mouth. It produces ulceration chiefly in the cecum and sigmoid, although any or all of the colon and rectum may become infected.

The diarrhea of amoebiasis is characterized by frequent evacuations of bloody mucus with small particles of feces. On microscopic study, the stools reveal numerous blood cells, but very little pus and few phagocytic cells. The amoebae contain ingested red blood cells. The diagnosis can be made in 80 per cent by a study of three successive fresh, warm stools. Proctoscopic examination will materially aid in the location of obscure rectal ulcers if the stools do not reveal the parasites.

The disease caused by the bacilli of dysenteriae is found in every country and is apt to occur in epidemics. It begins as an acute infection with fever, severe abdominal cramps, and frequent, painful stools. The whole of the large intestine and, in severe cases, even the ileum may be involved. Generally, the mucous membrane of the colon becomes swollen, red, and very vascular; extensive sloughing may occur, causing very foul-smelling evacuations. There are no isolated ulcers as in amoebiasis. The stools are thick and purulent, consisting mainly of polymorphonuclear leukocytes and phagocytic endothelial cells.

The dysenteriae bacilli can be cultured from the stool. After from five to ten days from the onset of the disease, specific agglutinins appear in the blood and by means of the Widal reaction a diagnosis of bacillary dysentery can be made.

Balantidium coli is a fairly common intestinal parasite of the domestic pig. It is highly probable that the isolated cases of infection in man are from contaminated excreta of swine. The organisms are hatched from ingested cysts. The habitat of the parasite is in the cecum, and it naturally encysts as it passes down the colon, producing an acute diarrhea. The colon mucosa becomes ulcerated, hemorrhagic, and necrotic; the stools are frequent and bloody. Recovery may be spontaneous, with a later recurrence. The symptoms are not unlike those of an amoebic infection, but differentiation may be made by the identification of the parasite in the stool.

There is a difference of opinion as to the pathogenicity of the flagellates. Megath and Brown (9), having studied a large group of patients troubled with diarrhea and infected with Giardia and Chilomastix mesnili, concluded that there is no scientific proof that these organisms are instrumental in the development of intestinal disorders. They believe that, in such cases, diarrhea is probably of a dietetic or neurogenic origin and the presence of flagellates is incidental.

Lynch (8) studied 1,040 patients with gastro-intestinal symptoms, of whom 23 per cent harbored flagellates. The symptoms in the infected group varied but little from those of the control group. Diarrhea, constipation, occult blood in the stool, and blood studies were about the same in both groups. He was unable to prove that the presence of flagellates is injurious to the host.

On the other hand, a number of authors are of the opinion that Giardia is truly pathogenic. Barrow (2) believes this flagellate may cause arthritis deformans and neurasthenia, and produce such symptoms as diarrhea, nausea, vomiting, abdominal pain, and loss of weight.

In our own laboratory we find flagellates in the stools of many patients who have hypo-acidity of the stomach. Since hydrochloric acid in .1 per cent dilution has been proved effective in killing flagellates in a short time, it is to be assumed that they cannot live in the presence of high acids. We have found no definite proof that the flagellates produce disease.

Neurogenic Diarrhea.—Diarrhea as a symptom in extremely nervous patients is thought to be due to an imbalance of the sympathetic nervous system. These patients present a fairly common picture. They complain of headache, insomnia, cold hands and feet, frequent micturition, exhaustion, and attacks of diarrhea. They are undernourished and depressed, and have sore spots over the body and a generalized abdominal tenderness.

Systemic Diarrhea.—Diarrhea is an outstanding symptom of a number of constitutional diseases. It is observed in sprue, pernicious anemia, pellagra, hyperthyroidism, and diabetes mellitus. Achylia is a characteristic of most of these diseases and probably is the responsible factor in the diarrhea.

Gastro-intestinal Diarrhea.—Achylia gastrica has long been recognized as an etiologic factor in the production of morning diarrhea. When free hydrochloric acid is lacking in the stomach, food is not properly prepared for digestion in the intestines. Bacteria, ordinarily destroyed in the acid media of the stomach, are carried to the intestines to produce fermentation.

Anacidity may be caused by prolonged anxiety, suspense or depression. It is usually present in debilitated patients at or beyond middle life. Probably not more than one-fourth of those with anacidity have symptoms which can be attributed to a low or complete lack of acid.

Chronic cholecystitis and chronic pancreatitis cause diarrhea in some cases. This is due, no doubt, to the fact that the fat splitting enzymes, failing to function properly, allow fat to enter the colon partially digested.

Chronic ulcerative colitis was first described by White (14) in 1888. The salient features of the disease are a continuous or intermittent bloody diarrhea and, occasionally, abdominal pain, fever, anemia, and general debility. The inflammation of the colon is evidenced by a hyperemic, adematous, granular, easily bleeding mucous membrane or profuse exudate covering the lining, and later, superficial and deep ulceration. The ulcers are confluent, with shaggy, indefinite borders. The infection begins in the rectum and lower colon and progresses upward to the cecum, sometimes involving the lower ilium. It may remain localized in the rectosigmoid region, however, for months or years.

Bargen (1), in 1924, isolated a gram-positive diplostreptococcus from the lesions in the bowels of patients with chronic ulcerative colitis. He was able to reproduce the disease in animals. Since that time he has found ample proof that the disease is infectious.

Carcinoma of the colon is the most important disease of the intestinal tract which causes diarrhea. At the polyclinic (12) 40 per cent of patients with carcinoma of the colon complained of diarrhea. In cancer of the right half of the colon the diarrhea is accompanied by severe anemia. In cancer of the left half and the rectum, the stools contain blood and mucus. The nearer the lesion to the anus, the more pronounced are the bleeding and tenesmus. The diagnosis can be made by proctoscopic examination and roentgenologic study of the colon after a barium enema.

Early lesions of the colon should be suspected when the patient's bowel habit changes from regular to irregular, or if he has an unusual rumbling of gas or a sense of fullness in the abdomen which persists for more than a few days.

Examination and Diagnosis.—The clinical study of a patient with diarrhea should include a careful history of the onset, as to whether it was acute or chronic, the number of stools, the presence of blood or mucus, the amount of pain, and the elevation of temperature. The examination should include a gastric analysis in the chronic cases, a proctoscopic examination, and a microscopic study of the warm feces. A roentgenologic examination of the colon should be made in all cases where organic disease of the bowel is suspected. Stool cultures and blood agglutination tests are indicated when the symptoms are acute and the stools are bloody and offensive in odor.

Treatment.—It is unscientific and faulty clinical practice to treat diarrhea other than as a symptom of organic disease until every effort to find the cause is exhausted.

In diarrhea due to allergy, the foods at fault can often be found by careful skin testing. In the absence of proper training and equipment for this study, the patient may be placed on an elimination diet. Rowe (11) has published an elimination diet which is fairly simple. He eliminates the foods which commonly cause allergy and divides the remaining widely used foods into four groups, each of which is tried separately for two weeks. The group causing the fewest allergic symptoms is the one chosen for the basic diet. Foods are then added one at a time. This method may be tried when the services of a competent allergist cannot be obtained.

Diarrhea due to faulty diet can be relieved by the addition of the necessary protein, carbohydrate, or fat, and to this an abundance of food rich in vitamins and minerals. It is important to furnish the patient with written instructions in terms easily understood.

Amoebiasis yields to specific treatment probably more spectacularly than any disease the modern physician is called upon to treat. The number of specific drugs in use permits wide choice and frequent change to meet the requirements of the individual case. Emetin, emetin-bismuth-iodid, stovarsal, treparsol, ipecac, and anayodin are all used with success. It is our custom to give emetin daily for ten days and follow this by stovarsal for six days. The patient rests for ten days and the course is repeated. If the symptoms have subsided after the second course, the patient is observed every thirty days for twelve months. A stool test and proctoscopic examination is made at each observation. If no further symptoms appear and the monthly examinations are negative, the patient is dismissed at the end of one year. If encysted endamoeba are found at any examination, another similar course is given. Should the disease persist further, anayodin or emetin-bismuth-iodid is substituted for the emetin. During the acute stage of the disease, the patients are hospitalized. A high caloric, low residue diet is given. Colon irrigations with salt solution are made daily. Hot abdominal stupes and opiates are used if the stools are frequent and tenesmus is present. Our results have been uniformly good.

Unfortunately, we have no specific drug with a curative action on bacillary dysentery. In the beginning, the patient is prostrated in bed and the treatment must be directed toward his comfort as well as toward a check of the disease. Opiates are required in large doses to control pain and tenesmus. The colon should be irrigated daily with a weak potassium permanganate solution. Polyvalent antidysenteric serum sometimes produces relief of symptoms. Although not a specific, it should be administered in all acute cases. Bassler (4) has reported excellent results from the use of astringent enemata. He uses silver nitrate or copper sulphate, 1 grain to the ounce. The diet should be entirely liquid during the acute stage. Intravenous glucose and saline by hypodermoclysis should be given daily.

Balantidium coli infection is relatively rare. It may be prevented by avoidance of contact with the excreta of swine. The treatment consists of stovarsal by mouth and irrigation of the colon with 1:1000 quinine solution.

For diarrhea caused by intestinal tuberculosis, the treatment is directed toward the checking of the general tuberculous process: rest, heliotherapy, and a high caloric diet. When the lesion is confined to one segment of the colon, surgical resection of the diseased portion gives excellent results.

Diarrhea is usual in carcinoma of the left half of the colon. It is important to recognize the cancer early. When obstruction occurs and diarrhea is pronounced, the lesion is probably far advanced. Carcinoma of the colon is the most hopeful of all the cancers of the alimentary tract if recognized early and promptly removed. More patients with carcinoma of the colon should be diagnosed early and referred to the surgeon for successful treatment.

In diarrhea of unexplained etiology, the treatment should be symptomatic while the search for the cause is continued. The diet should be regulated according to the severity of the disease. Since little digestion takes place in the large intestines, it is seldom necessary to limit the quantity of food; however, the food should be soft, easily digestible, well balanced, and should contain an abundance of vitamins and minerals and a relatively low residue.

The administration of glucose intravenously and sodium chloride subcutaneously is essential in severe cases. Hot abdominal stupes relieve some of the soreness and quiet peristalsis. Saline irrigations of the colon cleanse the bowel of stagnant material and aid in elimination.

Of the many drugs in use, only a few are beneficial. Camphorated tincture of opium and codine are helpful in the presence of pain, tenesmus, and frequent stools. Bismuth and iodine may be employed when an astringent is indicated. More recently, lactic acid combined with agar emulsion has been used with promising results. After all, the treatment of diarrhea is the removal of the underlying cause. When this is accomplished, the condition usually adjusts itself.

SUMMARY

(1) The normal stool is solid or semisolid. Several watery stools daily are the result of some disturbance in the physiology of the gastro-intestinal tract.

(2) The etiology of diarrhea is discussed under six groups: allergic, diatetic, parasitic, neurogenic, systemic, and gastro-intestinal.

(3) The treatment depends upon the nature of the underlying cause. It is unscientific and faulty clinical practice to treat diarrhea other than as a symptom of organic disease until every effort to find the cause is exhausted.

REFERENCES

1. Bargen, J. A.: Experimental Studies on the Etiology of Chronic Ulcerative Colitis, Collected Papers of Mayo Clinic, 1924, pp. 241-251.
2. Barrow, J. V.: A Clinical Study of Intestinal Protozoa, Am. Jour. Trop. Med., 1924, iv, p. 23.
3. Bassler, A.: Diseases of the Digestive System, F. G. Davis Company, 1928, i, p. 81.
4. Bassler, A.: Diseases of the Digestive System, F. G. Davis Company, 1928, ii, p. 393.
5. Dorst, S. E., and Morris, R. S.: Bacterial Hypersensitivity of the Intestinal Tract, Am. Jour. Med. Sc., 1930, clxxx, pp. 650-656.
6. Henry, J. P.: Skin Lesions Encountered Among Allergic Individuals, Sou. Med. Jour., 1931, xxiv, pp. 614-619.
7. Lasch: Arch. f. Path. Anat., 1875, lxv, p. 196.
8. Lynch, K. M.: Protozoan Parasitism of the Alimentary Tract, The Macmillan Company, 1930.
9. Magath, T. B., and Brown, P. W.: Study of the Symptom, Diarrhea, Am. Jour. Trop. Med., 1930, x, pp. 113-136.
10. Rowe, A. H.: Quoted by Vaughan (see below).
11. Rowe, A. H.: Food Allergy, Lea and Febiger, 1931.
12. Sanders, L. C.: Carcinoma of Colon and Rectum, Sou. Med. Jour., 1931, xxiv, pp. 606-611.
13. Vaughan, W. T.: Allergy, C. V. Mosby & Company, 1931, p. 234.
14. White, W. H.: Simple Ulcerative Colitis, Guy's Hospital Report, 1888, xlv, pp. 131-162.

DISCUSSION

DR. JOHN L. JELKS (Memphis): Mr. Chairman and Gentlemen, I want to compliment Dr Sanders for one thing. He almost spoiled it all, but he started off right; he started off with a well-balanced, scientific discussion of the subject of diarrhea when he indicated that any diarrhea has an etiology. My friend spoiled it all when he got to quoting these men who don't study diarrhea as I believe Dr. Sanders does and as I know I do. All these cases have causes. There isn't any such thing as "ulcerative colitis," or shouldn't be in our day—"spastic colitis," "mucos colitis" or "diarrhea," except as a symptom.

As to amebiasis, you may have constipation all the time and never a diarrhea.

Balantidium coli is a rare condition in this section of the country. I have seen only one case, and I mean by that that there are very few cases because, gentlemen, I have a least fifty cases of protozoan infection on my hands right now. The chilomastix mesnili, the giardia, the trichomonas intestinalis and the ameba are the principal ones found in this section of the country, and I want to tell you, gentlemen, if my little office attendant didn't make a diagnosis of flagellosis, note, without my examination, from the symptoms that patient would give, I would feel like dismissing her. Don't tell me they don't produce symptoms. Why, the Doctor knows that he has trichomonas intestinalis. It is all over this country now, but when I told them years ago they had flagellate diarrhea they thought I was a nut, and some of them still think so.

He speaks of intestinal flagellosis. Did you ever think of cholecystitis from the same thing? Yesterday I had two new cases in my office that both came with giardiasis, both had had the appendices removed, and then they had had the ovaries and uterus taken out, and finally the gall bladder. Now why should I not rise in protest against this rotten condition in our country? The country is full of these protozoan intestinal cases and you gentlemen ought to look for them. That is what I am pleading for. Those gall bladders were diseased, yes, they both had giardia in them, and that is all they did have in them.

Bargen bacillus? Rot! There isn't any such thing. The patient has a streptococcic colitis, and if you look upstairs around some pyorrheic teeth or some sinuses you will find it in every case, or it is protozoan. What do they do now when patients come with diarrhea? What do they hunt for first? They hunt for some diseased teeth. I have been preaching this for years. You look into that gut; you may have an allergic gut, I will admit that, and we do every now and then have an allergic gut that is red, swollen and puffed, and then without your protozoa you can almost surely make your tentative diagnosis.

The treatment depends upon the pathology and the etiology. Let's get right. If you have a spasm, that is a symptom and you can control it with belladonna; if you have pain you can control it better with ice than with heat; if you have a high state of congestion you can control it with ice better than with heat. You put an ice-bag on a diseased appendix and you put hot water on a diseased colon. Is there any sense in it?

DR. L. CARL SANDERS (Closing): In closing, I should like to show a few slides.

The first will simply emphasize the classification of diarrhea. We think of diarrhea in terms of one or the other of these six types:

(1) Allergic.
(2) Dietetic.
(3) Parasitic.
(4) Neurogenic.
(5) Systemic.
(6) Gastro-intestinal.

The second slide represents a microscopic photograph of amebiasis. You will notice that the picture reveals the amebae in the center with red blood cells. On either side you see only the red blood cells, in contra-distinction to the stool of bacillary dysentery (slide 3), in which no red blood cells are seen. There is quite a difference in the stools. One has the amebae with the red blood cells, whereas the other has the large phagocytic cells and leukocytes.

Slide 4 shows a bird's-eye view of the colon. This is characteristic of the position of a normal colon. In contrast, slide 5 represents diverticulosis of long standing. Notice the numerous diverticuli.

In the corner of slide 6, which illustrates amebiasis, there is a perforation of an amebic abscess. We should watch for an acute condition of this kind.

Slide 7 shows a very chronic ulcerative colitis. You can see that only the first section of the lower bowel is involved. Two years later you notice the difference in this patient. The colon is involved all the way from the cecum to the rectum.

Carcinoma of the cecum is seen in slide 8. On the other side is shown the size of the tumor removed. Note how it corresponds with the deformity in the cecum.

Slide 9 illustrates a carcinoma of the transverse colon. On this side you can see the ingested meal and on the other side a barium enema.

Slide 10 shows a carcinoma of the sigmoid. Carcinoma of the left half of the colon practically always produces diarrhea.

Another carcinoma of the sigmoid is demonstrated on slide 11. At the right you see the filling defect at the lower end of the rectum, and on the other side the tremendous dilatation of the rectum. Dilatation of the rectum is always present in obstruction of the lower end of the sigmoid. In nearly every case proctoscopic examination will reveal the distended bowel.

A lateral view of carcinoma of the splenic flexure is seen in slide 12. A little trickle of barium comes through the narrowed bowel lumen.

I want to thank Dr. Jelks for his excellent discussion of this report. He has a broad experience in the management of patients with diarrhea. We do not all agree with him, however, on the question of flagellates.

Finally, I want to emphasize one point. When we see a patient with diarrhea, first of all we must find the cause. Diarrhea does not develop without definite cause. There is always some pathology within the gastro-intestinal tract, some constitutional disease with diarrhea as a symptom, a protean sensitization, or a dietetic imbalance.

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H. H. SHOULDERS, M.D., Editor and Secretary

OCTOBER, 1932

EDITORIAL

Automobile Accidents and the Medical Profession

Records show that there were 33,000 deaths and over a million injuries from automobile accidents in the year 1930. In the decade from 1921 to 1930, inclusive, the number killed was 230,353.

According to an item in the Journal of the American Medical Association, October 1, 1932, a committee appointed by the Columbia University Council for Research in the Social Sciences to study compensation for automobile accidents has recently made its report of 313 fatal cases which it investigated. Some of the cases investigated were insured. Some were not. Of the cases with insurance, enough money was recovered to pay for the medical care and funeral expenses in 77 per cent of cases. In 11 per cent of cases payments were insufficient to meet these costs, and in 12 per cent there were no payments at all. Of the cases not covered by insurance payments sufficient for medical and funeral costs were made in 7 per cent of cases. Insufficient payments in 8 per cent and no payment at all in 85 per cent.

As to the losses sustained by hospitals in caring for these cases, figures were obtained from fourteen Philadelphia hospitals. These hospitals took care of 688 cases. The treatments ranged from first aid, to long periods of hospitalization. Free treatment was given to 429, or 62 per cent of these patients. Charges amounting to $16,410 were made in 259 cases. Of this amount, one-third remained unpaid at the end of a year following accidents.

In 1929 nineteen New Jersey hospitals cared for 1,781 automobile accident patients. They rendered service in the amount of 22,440 hospital days. Bills for these services amounted to $106,089, of which amount fifty-six per cent was collected.

In 1930 the Ohio Hospital Association found that of $810,489.14 in hospital bills for service rendered automobile accident patients, $406,761.24, or approximately 50 per cent, was considered uncollectable.

As a result of its studies the committee goes on record as favoring some form of compulsory liability insurance on the part of automobile owners. One provision of the bill proposed by the committee covers the treatment and care of injured persons.

These figures, while meager as compared to the country as a whole, portray an enormous expense and wastage.

Theoretically, or legally, the owner of a car is liable for damage done, but of what value is a judgment against a man who has just bought a large second hand car on a $25 down payment. The burden falls on the medical profession, the hospitals and the injured persons or their families.

The following experience came under the observation of the writer. A man in moderate circumstances took his wife and four children for a Sunday afternoon ride in a dilapidated Ford. It developed trouble. The man got out and was immediately run over by a large Studebaker car driven by a colored man. The Studebaker had defective brakes. The colored man had bought it the Saturday before on a $25 down payment from a second hand dealer. The man died in a few days. He left a widow and four children. Another child was born a month later. The colored man was convicted in the court for reckless driving, a judgment was obtained, but none of these legal accomplishments did the widow and orphans any good. None of them paid the hospital bill. None of them paid the doctor's bill.

It is understood that legislation similar to that proposed by the committee has been defeated in Tennessee by the influence of second hand automobile dealers.

In recent years we have discussed human rights and liberties to the neglect of human responsibilty. Responsibility must go hand in hand with human privilege. Each driver of a car would have equal rights if required to show that he is in position to meet the obligations that may arise in consequence of his driving the car on the public highway. Such a provision makes for equal rights and equal responsibilities; at present the rights and responsibilities are not equal. Such legislation is in effect in several states now. The mortality, the morbidity as well as the economic wastage which follows these accidents, call for action.

HIGH TAXES AND THE MEDICAL PROFESSION

Doctors are in no position to collect fees for services rendered people who cannot buy food. Doctors are in poor position to collect fees for services rendered people who are barely able to buy food, clothing, and pay the taxes on the house. Doctors are in poor position to collect a fee from the man in the country who has a large farm but whose taxes and interest charges barely can be met out of his earnings. Doctors, in our opinion, have carried on through this depression at greater sacrifice, and with less grumbling, than any group of citizens we know.

In the past we have lauded the home and the family circle as the foundations of our civilization. By public acts we have turned on that home to tax it to extinction in order to render public services which in many instances are not needed.

In the name of *progress* we have done the things which are putting homes under the hammer. When the individual home and the individual family practitioner of medicine have been taxed and legislated out of existence what public service however vital can take their places?

Youth certainly needs services, guidance and opportunities but the results are not always commensurate with the money and energy expended in giving these services and opportunities, by public or private agencies.

Is it not possible that the overcoming of difficulties in youth may be the very training necessary to make a man for the future? Some one once said, "What if Lincoln had gone to Yale?"

To remove difficulties from the path of youth may be the very act that brings ruin. It may deprive youth of a development most needed.

Four years ago there were five outstanding Americans whose names were before the party conventions for nomination for President of the United States. Four of the five were college graduates, all of whom worked their way through college. The other never went to college at all. All were outstanding Americans. All were leaders.

There are thousands of men in their age group, who had what might be regarded as ideal opportunities in youth, who have never been heard of and doubtless never will.

Up to now governmental bureaus of all sorts, in spite of three years of depression, have demonstrated a political power to survive regardless of whether they are useful or not.

We are told, on reliable authority, that one out of seven people are working for the government and that one-fourth of the earnings of all the people is paid in taxes. The one man on the public pay roll probably has more vote getting power than any three of the six not on the public pay roll. When the number of people on the public pay rolls is increased a little bit more they will hold an overwhelming political power. Then what will happen? The federal government, the states, counties, and municipalities are faced with deficits and still the bureaucrats, even the parasitic type, hold on. Some say because it would increase unemployment to discourage them.

Medicine is involved in all this in a most vital way. Its economies, its whole vital service, its very existence.

We still stand for the supremacy of the home, the family circle and the individual practitioner even at the sacrifice of many public services however desirable from any viewpoint.

DEATHS

Dr. D. M. Goodner, Fayetteville; University of Alabama, 1876; aged 83; died, latter part of September.

Dr. J. L. Powell, Friendship; University of Tennessee, 1899; aged 59; died September 24.

Dr. E. M. Cherry, New Providence; Emory University, 1895; aged 37; died September 1.

Dr. B. R. McKnight, Auburntown; Vanderbilt University Medical School, 1887; aged 69; died September 13.

Dr. E. M. Shepherd, Nashville; Eclectic Medical College, Cincinnati, 1895; aged 57; died October 3.

Dr. Harry T. Hillstrom, Nashville; University of Minnesota, Minneapolis, 1927; aged 30; died October 3.

NEWS NOTES AND COMMENTS

The next written examination of the American Board of Obstetrics and Gynecology will be held on Saturday, October 22, at 2 P.M., in 19 different cities of the United States and Canada. For application blanks and other information, address Dr. Paul Titus, Secretary, 1015 Highland Building, Pittsburgh, Pennsylvania.

The annual meeting of the Society of Plastic and Reconstructive Surgery is to be held October 28 and 29 in New York City.

"Fight Disease by Mail."

"Instruction cards may be sent out with water bills."—Headline.

Why not also phone a Christian Science Healer?

Dr. Thos. J. Hicks, of Copperhill, was a patient in St. Mary's Hospital, Knoxville, suffering from an infected toe.

Dr. L. F. Loggins, of Charlotte, has been elected chairman of the Dickson County Board of Education.

Dr. A. B. McTeer, of Rockford, has recovered sufficiently to again be in his office.

Dr. John Jackson, of Dyer, was recently operated on at the Mayo Clinic.

Dr. E. B. Elder, of Knoxville, was a delegate to the American Hospital Association in Buffalo.

Dr. Percy Toombs, of Memphis, was elected President of the Central Association of Obstetricians and Gynecologists at the meeting recently held in Memphis.

Dr. A. F. Richards after ten years with the State Health Department has resigned and opened offices in Sparta.

An attempt to reduce services of physicians to the plane of "public welfare" organization, is being made under the auspices of Dr. Ray Lyman Wilbur, Secretary of the Interior under the present administration.

This socialistic enterprise should frighten all those who object to their health and lives being under the absolute dominance of political officials.

God save this country from the day when doctors are political appointees, when citizens of this country can receive medical attention only from those who receive their appointments through political influence.

The public health service is of great assistance in preventing and curing epidemics. Its attention to general sanitary matters is most welcome and appreciated but when citizens of these United States are utterly dependent on political appointees for health and life, heaven defend them!—Greeneville Sun.

MEDICAL SOCIETIES

Benton-Carroll-Henry-Weakley Counties:

Dr. Burroughs, of Jackson, was the essayist at the September meeting. The subject discussed was "Toxemias of Pregnancy."

Blount County:

The meeting of September 15 was at Chilhowee Inn, Walland. After dinner there was the regular scientific program.

Davidson County:

September 13—"Relief of Prostatic Obstruction by Transurethral Resection," by Dr. J. C. Pennington. Discussion opened by Dr. C. F. Anderson.

September 20—"Some Points in Allergic Diagnosis in Children," by Dr. James Overall. Discussion opened by Drs. Herman Spitz and J. B. Hibbitts, Jr.

September 27—"Treatment of Acute Empyema in Children," by Dr. Murray Bell Davis. Discussed by Dr. Beverly Douglas.

October 4—"Sterilization of the Female," by Dr. Lucius Burch. Discussed by Drs. Sam Cowan, Holland Tigert, R. S. Duke and Paul Warner.

Gibson County:

The Gibson County Medical Society held its regular monthly meeting at Trenton, September 26. There was a good attendance of members and doctors from surrounding counties. Dr. T. W. Jones, of Bradford, the president, presided at the meeting. He introduced Dr. Arthur Cooper and Dr. J. A. Crisler, Jr., of Memphis. Dr. Cooper is secretary of the Mid-South Medical Society. He read a very interesting paper on "Surgery of the Spleen." Dr. Crisler read a paper on "Pains Around the Heart." Both of these papers were freely discussed by the members of the society. Dr. W. M. Krause, of Bolivar, was scheduled to appear on the program, but was unable to be present.

On August 30, the annual barbecue was held at the fairgrounds in Trenton. Barbecue, cold drinks and watermelons were consumed in enormous quantities. The membership was present nearly 100 per cent to see that the visitors were well cared for. Many doctors from adjoining counties and all who had addressed the society during the last year were invited. After the feast, Dr. W. A. Bryan, of Nashville, read a paper on "Cancer," which was discussed by Drs. R. A. Barr, of Nashville, W. C. Chaney, of Memphis, and Tracy Collier, of Memphis.

Hamilton County:

Future meetings are as follows:

October 20—"Industrial Surgery," by Dr. John H. Revington.

October 27—"Fracture of the Leg and Ankle," by Dr. Robert C. Robertson.

November 3—"Sinus Bronchus Disease," by Dr. T. Lyles Davis and Dr. L. T. Stem.

November 10—"Eclampsia," by Dr. D. Isbell.

Hardin-Lawrence-Lewis-Perry and Wayne Counties:

September 27, the Five-County Medical Association met in Savannah in regular session with a good attendance. Several addresses were made by visiting physicians. Among them were Dr. J. H. Tilley, who spoke on "Transfusions"; Dr. E. C. Mitchell, "Hay Fever"; Dr. Newton S. Stern, of Memphis, on "Heart Diseases," and Dr. J. W. Danley, on "Foreign Bodies in the Eye, Ear, and Nose."

Local doctors were hosts to the meeting with Dr. O. H. Williams as chairman.

Knox County:

September 13—"Sarcoma of the Bladder with case reports," by Dr. Fred Garvey. Discussed by Dr. Tom Barry.

September 20—An all-day meeting. "The Eye in Health and Disease," by Dr. R. H. Newman, Knoxville; "The Treatment of Anemias", by Dr. J. B. McElroy, Memphis; "Hematuria With Special Reference to The Importance of Early Recognition of The Conditions Causing It." "Pathological Clinic on Heart Disease," by Dr. Ralph Monger, Knoxville; "Allergy in Children with Special Reference to Asthma," by Dr. H. Clay Mitchell, Memphis; "Aspects of Thyroid Disease," by R. S. Dismore, Cleveland, Ohio. At 7 P.M. dinner and vaudeville with Dr. E. R. Zamp as toastmaster.

September 27—"Skull and Brain Trauma," by Dr. John Smoot.

Programs for the remainder of the year have been arranged as follows:

October 4—Dr. R. G. Waterhouse; October 11—Dr. G. A. Williamson; October 18—Dr. Eugene Abercrombie; October 25—Dr. William R. Cross; November 1—Dr. Henry C. Long; November 8—Dr. A. L. Rule; November 15 — Claude Wood, D.D.S.; November 22—Dr. Hugh Reaves; November 29—Dr. R. G. Brashear; December 6—Dr. Horace Brown; December 13—Dr. E. S. Clayton; December 20—Dr. John Moore; December 25—Dr. Santa Claus.

Madison County:

On September 7 the society held its annual outing at Felsenthal Springs. Seventy-three guests and thirty-nine members were present to enjoy the barbecue dinner, and other sports and amusements. Speeches, medical subjects and troubles were left at home and everybody present joined in the celebration.

Monroe County:

The September meeting was held at the Sweetwater Hospital on the 13th. There were three papers read. "Vitamines," by Dr. J. A. Hardin; "Eclampsia," or the "Complications of Pregnancy," by Dr. L. L. Barnes; "Hospital Duties to Surgeons and Doctors and Their Duties to Each Other," by Dr. E. P. Parker.

Robertson County:

At the September meeting Dr. W. B. Dye was the host. A squirrel stew plus "all the fixins" opened the program on the High School campus. In addition to the membership a number of visiting doctors and other friends were present, the total number being more than sixty. The scientific program consisted of a paper by Dr. C. S. McMurray, of Nashville, on "Pelvic Infections," discussed by Drs. M. B. Garner, W. A. Guthrie, and Murray Davis. Dr. Owen Wilson, of Nashvile, spoke on "Vomiting in Infants," discussed by Drs. J. S. Freeman, C. S. McMurray, J. R. Claypool, R. C. Derevaux, M. B. Garner, W. S. Rude, and W. H. Witt. Dr. W. A. Guthrie, of Franklin, Kentucky, discussed, "The Application of the X-Rays to Skin Conditions."

Dr. R. D. Moore entertained the doctors and guests with a short, humorous talk.

Sullivan-Johnson Counties:

On September 7, Dr. J. R. McCord, of Atlanta, addressed more than 40 doctors from Johnson City, Elizabethton, Kingsport and Bristol. Dr. McCord's subject was "Prenatal Care, Toxemias of Pregnancy, and Chronic Nephritis Complicating Pregnancy."

Washington County:

On September 8, Dr. J. R. McCord, of Atlanta, addressed the society on "Puerperal Sepsis, Its Causes and Treatment." There were 37 doctors present including visitors from Bristol, Elizabethton, Kingsport and Erwin.

Williamson County:

Dr. Jas. Overall, of Nashville, spoke to the Society on September 13. A large attendance listened attentively to the discussion of "Asthma and Eczema Allergy."

OTHER MEDICAL SOCIETIES

The Walnut Log Medical Society will meet on October 19 and 20. Members of Fulton and Hickman Counties in Kentucky and Dyer and Obion in Tennessee, joined in 1922 in establishing this society. Any member in good standing of any county medical society anywhere may join the Walnut Log Society. The program this year is especially arranged for the general practitioner. Papers will be presented by selected men.

WOMAN'S AUXILIARY

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STATE CONVENTION—NASHVILLE
APRIL 11-13, 1933

The first fall meeting of the Woman's Auxiliary to the Davidson County Medical Society was held Monday afternoon at Centennial Club and was largely attended. The meeting was presided over by Mrs. Theodore Morford, President. The first part of the afternoon program was devoted to a Memorial Service for the late Mrs. William D. Haggard, the first State President, and organizer of the Auxiliary in Davidson County. Mrs. Morford paid a beautiful tribute to the memory of Mrs. Haggard as an auxiliary member and friend. Dr. George Stoves, pastor of West End Methodist Church, spoke on the life of Mrs. Haggard. Resolutions on the death of Mrs. Haggard were read by Mrs. Oscar Nelson.

During the brief business session the committee chairman for the year were appointed, and the program for the yearbook was submitted.

Plans were made for extensive work this fall. We are giving due attention to our Scrapbook and history. Stories of the lives of some of our most famous doctors in the state and their history have been contributed to the Southern Medical Auxiliary to be used in the book, "Romance of the Doctor," sponsored by the Southern Auxiliary.

An important work of the Health and Philanthropic Committee this fall will be to secure dependable health programs for various organizations, and for children of the schools. The doctors have offered their services, and the Parent-Teachers Association have welcomed this offer and have requested health talks.

The Philanthropic Committee already have a motor corps, and will help the United Charities. They will take the Welfare Workers one day a week on their rounds of duty. They will also help the Red Cross with charity sewing and distribution of garments.

Another worthy object that has been sponsored by our organization is the circulation of Hygeia.

The concluding feature of the meeting was a membership tea in honor of the new members of the Auxiliary. The lovely flowers used in decorating the reception rooms were taken to the hospital.

From Shelby County comes an interesting report of their July meeting, defining the object of the Memphis and Shelby County Auxiliary.

"The word 'Auxiliary' is defined as 'giving, or furnishing aid or support.' This is our object—to live up to the definition. To be more specific, our primary aim is to promote cordiality and harmony between the doctors and their wives.

"Our secondary object is—Our Student Loan Fund. In March our annual Spring card party was held, at which time $600.00 was realized, running our Student Loan Fund up to $4,100.00. Many willing hands were put to work at our card party and at our last meeting in June a reward was offered for our efforts—a celebration at Maywood, a swim, dance, and barbecue.

"Some one has said that growth and progress are slow, but after viewing our many members and their doctor husbands at our most successful barbecue, I realize that in our four short years our organization has made rapid strides, and has fulfilled our primary aim of harmony and cordiality between the doctors and their wives, as well as us tucking a neat $100.00 clear profit from our barbecue for our Student Loan Fund."

What a wonderful piece of work Shelby County Auxiliary is doing for the Medical Student.

GLEANINGS

AUTOCRACY OF THE SICK ROOM HAS BECOME VESTED IN THE DESPOTIC REALM OF THE NURSE

The nursing problem is becoming increasingly an example of the frequent paradox that where illness is concerned the "cure is worse than the disease."

As an example of efficiency "hoist by its own petard" the trained nurse situation is one of the most appalling. The medical profession views this Frankenstein of its own manufacture with positive unbelief.

Autocracy of the sick room has become vested in the despotic realm of the nurse who has become a positive czar and who is as luxurious an expense as any Romanoff ever dared to be. Sickness is an expense that no family budget can afford to carry under the best of circumstances, but under the present conditions insisted upon by a trained nurse before she will accept a case, the employment of such assistance in illness become enough to actually bankrupt a family.

The registered nurse situation today illustrates perfectly the process of refusing to render service in accordance with hire received. The shift system being forced upon the public makes the patient of less importance than the number of hours a day that a nurse stays under the patient's roof. If the patient is dying of typhoid, for example, a nurse puts in no more time than if the case is a neurasthenic and vice versa. Nurses are demanding the same hire and the same consideration out on a case where the actual nursing duties—many of these not at all menial—require two hours per day. Take for example a case of fatty heart in some degenerative disease where the patient's cumulative chronic condition demands the presence of a trained caretaker, even though the duties are simple, what the present movement tends to insure would be that such a patient should have a shift of three nurses per day each at the rate of fifty dollars a week and board. This is a case of reductio ad absurdum of liberality in the care of the sick. Any doctor who put in a fee of $150 a week and board for the care of such a case would be accounted a brigand. Yet this discounting of wisdom, skill and directive science upon the part of the physician is made a weapon of argument by the already overtrained and over-authoritative nurse in her fight for the greatest pay and the least service. The ranks of the nursing profession have held and do hold thousands and thousands of heroic and unselfish women, who undoubtedly have been at the mercy of overbearing patients but the present crusade is basically wrong.—*Illinois Medical Journal,* August, 1932.

ABSTRACTS OF CURRENT LITERATURE

ANESTHESIA

By Hugh Barr, M.D.
Medical Arts Bldg., Nashville

Spinal Anesthesia. Grover C. Kirk, A.M., M.D., and Ralph D. Green, A.B., M.D., Lincoln, Neb. The Nebraska State Medical Journal, July, 1932.

After nearly four hundred spinal anesthesias without any fatalities or serious complications, the authors are convinced that this type of anesthesia is entirely safe when properly administered. Neither high nor low blood pressure is a contraindication for spinal anesthesia as they found that hypotensive patients had less fluctuations than the hypertensive ones.

Spinal is safe when a small amount of spinal fluid is withdrawn, the novacain crystals dissolved and the fluid re-injected with slight mixing and without force. Post-operative deep breathing and pre-operative administration of caffein is used to prevent post-operative pulmonary complications. Post-operative elevation of the foot of the bed is considered unnecessary.

Ephedrine sulphate should be used in selected cases. Hyoscine hydrobromide should never be used as it causes alarming falls in blood pressure and collapse may be expected. Spinal anesthesia is considered the anesthetic of choice for all surgery below the diaphragm.

DERMATOLOGY

By E. E. Brown, M.D.
Doctors Building, Nashville

Safer Gold Therapy for the Treatment of Vitiligo, by Harry C. L. Lindsay, M.D., Pasadena, Calif. The Urologic and Cutaneous Review, October, 1932.

The author reports and shows photographs of a case of vitiligo on the eyelids of a little girl in which he used the soluble gold according to the formula of Dr. Noxon Toomey. This was given by mouth in two drop doses which contained one-tenth grain of metallic gold per ten drops of solution. The adult dose is ten to fifteen drops three times a day. The results of this case was highly satisfactory.

A Mechanical Vacuum Vaporizing Apparatus and Elemental Iodine in Treatment of Tinea Tonsurans: A Preliminary Report. By Albert Strickler, M.D., Philadelphia, Pa. The Urologic and Cutaneous Review. October, 1932.

The treatment is based upon the vaporizing of metallic iodine and the production of a vacuum on the part treated simultaneously with projection of the vaporized iodine. Three applications were given daily with the vacuum released between each. The application was painless and there was no secondary irritation. Ten cases were reported with good results in all.

The advantages of the vacuum treatment are direct action on the fungus; hair restoration without primary lanugo growth, due to the absence of epilation. All known hygienic assistance was purposely avoided in order that the cases could be treated under the worst possible conditions.

OPHTHALMOLOGY

By Robert J. Warner, M.D.
Doctors Building, Nashville

Decompressive Trephining of the Optic Canal. M. G. Worms. Arch. d'Opht., April, 1932.

Many cases of optic neuritis are followed by optic atrophy because the treatment is so slow in relieving pressure on the nerve. A mechanical means of decompression was discovered in the following manner. During curettage of the posterior ethmoidal cells by the orbital route, on a patient who was suffering from optic neuritis, the internal portion of the bony optic canal was removed. In ten days visual acuity rose from 0.2 to normal, with normal appearance of the disc. Following this three other patients were deliberately operated on in the same manner, with beneficial results. The technique of the operation is given in detail with two illustrations. Transitory diplopia due to disturbance of the pulley of the superior oblique muscles lasts about eight to fifteen days. After removing the internal wall of the optic canal the dural sheath of the nerve is slit to allow decompression of its fibers. The operation is considered to present little risk, and is indicated where prolonged pressure is producing permanent damage to the nerve.

ORTHOPEDIC SURGERY

By Robert F. Patterson, M.D.
Medical Arts Building, Knoxville

The Diagnosis of Early Poliomyelitis, by Dr. J. E. Gordon. Jour. A. M. A., Sept. 24, 1932.

It is extremely important that the symptoms of the pre-paralytic stage of poliomyelitis be well understood by the general practitioner and those who come in contact with the child first since it is only in this stage that the convalescent serum is helpful or curative.

The author cautions against mistaking the symptoms of this disease with others which begin similarly during an epidemic, causing neglect of measures to eradicate the other diseases, such as diphtheria.

The symptoms are those of many general infections, including typically a low grade fever, headache, and vomiting. "Stiffness of the neck, rigidity of the spine and ataxic tremor are the three physical signs of outstanding clinical consideration." Of 446 cases referred to him for poliomyelitis, only 50.4 had the disease. This graphically illustrates the difficulties in diagnosis.

The course of the disease is about as follows: Incubation period, 7 to 14 days; period of systemic invasion, 24 to 36 hours. The symptoms in this period are fever, headache, nausea and vomiting, and mild pharyngitis. There follows a remission of fever and other symptoms. This lasts from one to four days, followed by a period of from one to six days with the previous central nervous symptoms; with rigidity of the neck, stiffness of the spine and tremors added. Then paralysis may or may not supervene.

A large proportion of the cases affected never have paralysis.

The laboratory is helpful and confirmatory.

Increased cell count, increase in serum globulin, and in the amount of reducing substance often occurs.

This dread disease should be borne in mind in any child presenting acute symptoms, especially during the late summer and early fall months.

PEDIATRICS

By John M. Lee, M.D.
Doctors Building, Nashville

Therapeutic Use of Antipoliomyelitis Serum in Preparalytic Cases of Poliomyelitis. William H. Park, M.D., Jour. A. M. A., Sept. 24, 1932.

Poliomyelitic is due to a filtrable virus. No disease due to a filtrable virus is known that can be benefited by an antiserum after clinical symptoms have developed.

Netter, Zingher, Aycock and Luther, McEachen, Macnamara and Morgan, and Shaw, Thelander and Limpos have reported treating cases of poliomyelitis with serum and concluded that the results were better than had been obtained without serum, in previous cases. None of these writers had control cases with which to compare their results.

Neal, observing both treated and untreated cases in the same epidemic was of the opinion that the untreated cases did about as well as the treated cases.

Kramer, Aycock, Solomon and Thenebe report observing a group of cases of poliomyelitis in the preparalytic stage that received serum, and a similar group in the same epidemic of 1931 that received no serum. They conclude, "that this therapeutic test of serum more nearly approaches a controlled experiment than any they have previously made; that no statistical evidence was obtained that convalescent serum is effective, but that the reverse conclusion—that it is of no value—may not be drawn."

The author reports the results observed in 927 cases of poliomyelitis occuring in New York in the epidemic of 1931. These cases were all seen in the preparalytic stage of the disease and all had evidence of the disease in the spinal fluid. All cases were studied by pediatricians working under the Poliomyelitis Commission of the Academy of Medicine or by physicians of the hospitals caring for the cases. Serum was given subcutaneously, intraspinally or intravenously; in some cases serum was given by two or more of these methods. The total dosage varied from a minimum of 25 c.c. to a maximum of 100 c.c. The patients that survived were examined for paralysis and, if present, its amount at the end of three weeks, and again in five to six months. Statistical tables showing results are given. In this study 519 patients received convalescent serum and 408 cases did not receive serum.

The author concludes, "The results of the observation on treated and untreated patients in the preparalytic stage of poliomyelitis during the 1931 outbreak do not give any statistical proof that the serum has any value when given in cases after the cells of the central nervous system are involved." Not one of the pediatricians who treated these patients felt that he had seen any evidence of a curative influence of the serum.

ROENTGENOLOGY

By C. M. Hamilton, M.D., and H. M. King, M.D.
Doctors Building, Nashville

The Terminal Ilium, Appendix, Cecum, and Ascending Colon From the Standpoint of the Internist. By Donald P. Abbott, M.D., Chicago, September, 1932, Radiology.

Radiographic findings are aids in diagnosis and is most efficacious when associated with the general information available. Personal reports are more valuable than written. Cooperation is helpful to both radiologist and internist. The internist should be present at all fluoroscopic examinations. Helpful suggestions may save time and expense. By observation, he may be able to gain information that might escape a casual examination by fluoroscopist.

The appendix requires very careful cooperation: (1) Its frequency in causing lower right abdominal pain; (2) the question of chronic appendicitis; (3) frequent unnecessary removal.

Only the subacute and chronic cases are considered. Rigidity of abdominal wall after other causes have been eliminated is strong evidence of appendicitis. Its great range of position makes it imperative to exclude other causes of rigidity. In the female, pelvic infections have to be eliminated. An inflamed appendix may rest on the bladder or ureter causing symptoms resembling urinary pathology. Blood may appear in the urine. It may extend to the left, suggesting diverticulitis. It may be higher than usual suggesting disease of gall bladder or stomach. Its presence behind the cecum may cause symptoms of kidney disorder. A multiplicity of conditions may simulate appendicitis.

Pulmonary infections should be excluded in children with abdominal pain and rigidity. Chronic appendicitis is the most difficult to diagnose. Palpation and manipulation during fluoroscopic examination is a valuable aid. If the appendix is long and extends into the pelvis, a rectal examination may be convincing.

In chronic cases, a more extensive x-ray study can be made. A plain film can be made of the urinary tract. A complete fluoroscopic examination of the gastro-intestinal tract is done routinely. A kinked, tortuous, beaded, fixed appendix which is tender to palpation is strong evidence of disease.

Chronic appendicitis associated with colitis offers a difficult problem. The spastic cramp-like condition of the colon can be observed by the fluoroscope. Questioning may reveal the use of intestinal irritants, such as cathartics, and enemas. In abdominal pain associated with soft stools, gas production, and relief from evacuation, colitis is suggested. Barium enema may cause pain, nausea and vomiting in cases of colitis. The entire colon may be painful during the examination.

Rarely acute attacks of pain from gall stones or appendicitis may cause diarrhea due to reflex action on colon. However, the diarrhea is usually late. Evacuation fails to give relief.

Cases with rigidity and local tenderness should not be x-rayed.

The obstructive symptoms of carcinoma of the ascending colon are late. It can be recognized by fluoroscope. Non-annular lesions in ascending colon are suggestive of tuberculosis.

Diverticula or polypi in ascending colon or sigmoid may be the cause of right sided pain.

The terminal ileum may be adherent to pelvic organs, abdominal scars, or appendiceal region. It may be obstructed. Papillomas, tumors, or diverticula occur occasionally in the ileum. Plain film will show a gaseous distended outline of the ileum in cases of obstruction. In cases of partial obstruction a barium meal should be followed through to the colon. A thick terminal ileum shadow and hyperperistalsis is suggestive of ileocecal lesion. Repeat in doubtful cases.

SURGERY — GENERAL AND ABDOMINAL

By John L. Dies, M.D.
1213 Exchange Building, Memphis

Diverticulitis and Diverticulosis. John F. Erdmann, M.D. The Journal of the American Medical Association. Vol. 99, No. 14. Oct. 1, 1932. Pg. 1125-1128.

Diverticulitis is usually a disease of the left lower quadrant, but may occur anywhere along the length of the colon and small intestine.

It occurs chiefly in men between 40 and 50 years of age, but attacks in children are reported also.

The patients are usually of the well developed makeup, short, fat and overweight.

About one female to four or five males has this disease.

Operation should be performed in all acute cases, although it is known that subsidence and cure of attacks occasionally take place as in other infective processes.

All chronic cases may be observed until obstructive symptoms show.

Diverticulosis as a disease rarely presents any symptoms sufficiently diagnostic to focus the medical attendant's attention, but in a gastro-intestinal series of roentgenograms this condition is often found and when found is likely to receive slight attention as to prevention of acute attacks. Bargen and Victor have suggested a bland, non-constipating diet for diverticulosis. Fruits with seeds and of high cellulose content are prohibited, and with these suggestions the subject is dropped. One can but suggest proper attention to the bowels in these patients, being careful not to make the patient conscious of his anatomic or pathologic condition so as to make a mental invalid of him.

The presence of diverticula in the intestine merits no greater attention than does the existence of the appendix or gallbladder, except that there may be many diverticula, while there is only one appendix and one gallbladder; therefore, ordinarily the chance of acute diverticulitis would be greater, but clinical evidence shows that diverticulitis is by far rarer than disease of the gallbladder or appendix.

UROLOGY

By Tom R. Barry, M.D., F.A.C.S.,
and F. K. Garvey, M.D.
Medical Building, Knoxville

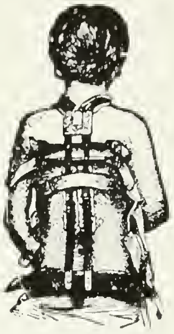
Resection of the Presacral Nerve for Cord Bladder. Fletcher H. Colby, M.D. N. E. Br. of A. U. A., Aug. 18th, 1932.

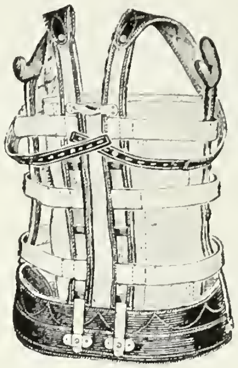
A practical consideration of presacral nerve resection for cord bladder has been given by the author. He gives two case reports which demonstrate the possibilities to be obtained, showing gross failure as well as an excellent result. This type of an article is to be commended since it keeps us aware of the limitations of such intricate procedures and makes us more careful in choosing the cases subject to such an operation.

To understand the rationale of this remedy it is necessary to know the innervation and physiology of the bladder. The bladder is innervated by three sets of nerves, sympathetic, parasympathetic, and somatic. The sympathetic fibers are motor to the internal sphincter and inhibitory to the detrusors or bladder wall muscles. They reach the bladder by way of the hypogastric ganglion through the presacral nerve. The parasympathetic fibers are motor to the detrusors and inhibitory to the internal sphincter and sensory to the posterior urethra and bladder. The pudic is a somatic nerve and is motor to the external sphincter and sensory to the posterior urethra. The sympathetic and parasympathetics balance urinary control and function. Any disease which affects the nerve supply to the bladder may produce an imbalance between these two sets of ennervation and urinary function is lost. In such instances resection of the presacral nerve may restore this balance. The main indication for such operation is injury to either the central or peripheral portion of the parasympathetic system, when the sympathetic system is intact. If total paralysis of the parasympathetics is present, the motor power is lost and the procedure is futile.

Resection was performed by the author in two instances of "cord bladder," one of which was for poor urinary control with urgency, and frequency. There was a residual of five ounces, and skin anesthesia of the typical saddle type. Was operated with complete relief of symptoms and complete emptying of bladder. The other case was advanced to where there had been dribbling for ten to twelve years. There was a residual of 16 ounces of purulent urine. Operation showed no relief of symptoms and the residual urine remained the same.

The first case shows proper selection of a case not too far advanced. The second case was a failure due undoubtedly to too great damage to the parasympathetic system.





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RECENT ADVANCES IN THE MANAGEMENT OF PROSTATIC OBSTRUCTION

PROSTATIC RESECTION VS. PROSTATECTOMY*

THOMAS D. MOORE, M.D., Memphis

THE first instrument designed to incise the obstructing prostate transurethrally was developed by Mercier in 1837. In 1873 Bottini improved the procedure by utilizing a galvano-cautery, which burned through rather than incised the tissue. As visualization was not possible, this method proved too hazardous, and it fell into disrepute. Since that time a number of others have endeavored to accomplish instrumental relief of prostatic obstruction. With the improvement of the cystoscope and perfected instrumental visualization of the vesical neck, definite progress was made. The most notable contributions were those by Chetwood, Young, Braasch, and Caulk. Until recently only those cases of median bar and median lobe obstructions were considered suitable for this treatment.

In 1926 Stern devised an instrument which incorporated an entirely new principle and which he called the resectoscope. A wire loop electrode was passed through the obstructing tissue, which was engaged in a fenestrum, and by means of a special high frequency current the prostate was removed in segments. The method was revolutionary in that it was applicable to lateral lobe as well as to median or bar types of obstruction. Unfortunately, the cutting current alone did not control hemorrhage; some of the patients operated on by this instrument bled profusely after operation. The method was soon practically abandoned.

A short time later Davis made possible the control of hemorrhage by electrocoagulation through the same electrode. He also improved the instrument in other respects. The fenestrum was made larger, the cutting loop was enlarged, and the beak was shortened. It is chiefly because of the patience and ingenuity of Davis that an efficient, safe, and practical instrument for the relief of prostatic obstruction is today an accomplished fact.

Since the pioneer efforts to radically remove the prostate by open operation, introduced by McGill in 1887, and further improved by Goodfellow, Fuller, and Freyer, the majority of patients suffering from this disease have been treated, of necessity, by the open operation. For many years the mortality rate was very high. When the importance of preliminary drainage and proper preparation of the patient was understood, the hazard was materially reduced, and in recent years the mortality rate of the operation in the hands of skilled urologic surgeons has been about 5 per cent.

Although prostatectomy, either suprapubic or perineal, has reached a high degree of perfection and the results obtained have been satisfactory, it seems that in the future this operation will be employed in a relatively small number of cases, as the instrumental correction of all types of prostatic obstruction has many advantages and few disadvantages. Transurethral prostatic resection has been used in a sufficient number of cases and over a sufficient number of years to indicate its worthiness and the permanency of the results.

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*Read before the Tennessee State Medical Association, Memphis, Tenn., April 12, 13, 14, 1932.

On account of the high mortality rate of prostatectomy which prevailed for many years, the idea is well established in the public mind that the operation is a dangerous one. The prospective patient usually has heard that about one of every three operated upon succumbs. The prevailing fear of this method of relief has caused many patients to defer surgical attention urgently needed and too often to seek relief too late. Prostatic resection will undoubtedly go a long way toward dispelling this widespread fear. When it becomes known that the risk is less than 1 per cent, that the period of hospitalization after operation is only a matter of a few days in the average case, and that the result is immediate and permanent return of normal bladder function, patients will begin to seek treatment earlier, and there will be fewer instances of advanced prostatic obstruction with extreme impairment of function and urosepsis.

Description of Instrument. The Stern-Davis resectoscope is composed of a sheath, size 26-F or 28-F (Fig. 1), and a working unit in four parts: (1) A wire loop electrode, (2) an observation telescope, (3) a water conduit, and (4) an incandescent lamp (Fig. 2). Near the proximal end of the instrument is a fenestrum ⅞ inch in length. The loop electrode is caused to move forward or backward, removing by a cutting current the tissue engaged in the fenestrum. The procedure is under visual control and bleeding points may be sealed instantly by applying a coagulating current through the same electrode. Both currents are supplied from a transformer (Fig. 3) which contains an automatic electromagnetic switch, making possible electrocoagulation by merely pressing a second treadle on a foot switch.

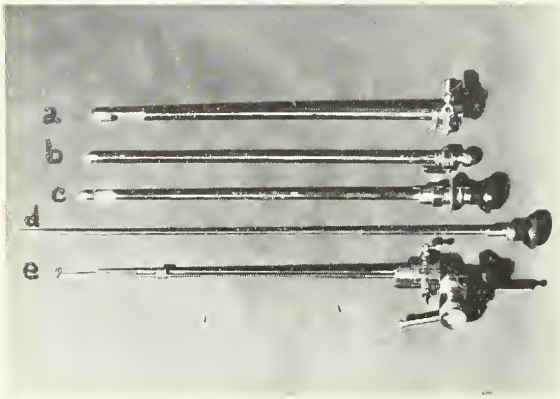

Fig. 1

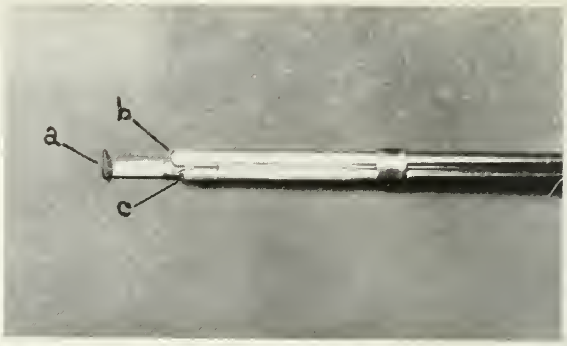

Fig. 2

This transformer was originally designed by Bovie, but was later perfected by Davis, who incorporated the electromagnetic switch. Two types of spark gaps and damped currents are used. The electrocoagulation is of the d'Arsonval type, for many years recognized as an efficient means of sealing bleeding points in operative cystoscopic work. Davis recently reported only one instance of secondary hemorrhage after 246 resections. In my own limited experience of 19 cases there has been no immediate secondary hemorrhage of any consequence. This may be attributed, however, to the extreme care exercised

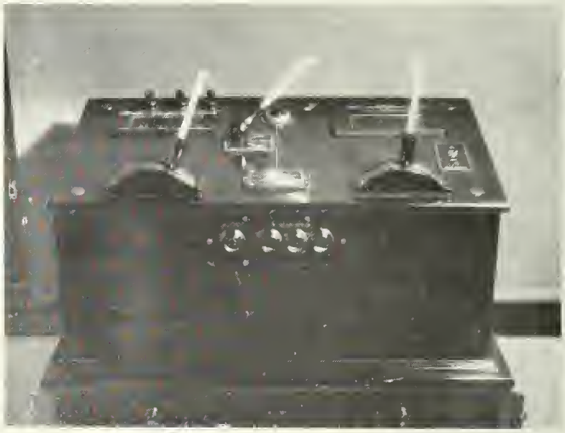

Fig. 3

at operation to thoroughly seal all bleeding points, as well as to the use of the d'Arsonval type of electrocoagulation.

Importance of Preparation—An adequate period of preliminary drainage before prostatectomy has been found a major factor in the reduced mortality rate. This treatment is even more important before transurethral resection. Its chief objects are, briefly: (1) the restoration of normal renal function, insofar as is possible; (2) elimination of infection in the urinary tract; (3) increase of the cardiovascular reserve, and (4) improvement of the general condition of the patient. Only a few days or several weeks may be required. Obviously, each patient presents a distinct problem. Serious impairment of renal function or a complicating pyelonephritis may necessitate a prolonged period of treatment. In such cases, drainage by suprapubic cystostomy occasionally is advisable before resection is attempted. In the uncomplicated cases, preparation for five or ten days is usually sufficient and is satisfactorily accomplished by urethral catheter drainage.

Technic of Operation—A preliminary hypnotic is desirable. Sodium amytal is preferred. Morphine may be given in addition if the patient is unduly nervous. For the actual operation, caudal and transsacral anesthesia is desirable, and nupercain is better than procain if the operation is to be extensive and prolonged.

Resection of one lobe is completed first, and then of the other. Median lobe obstruction, when present, is removed last.

The resectoscope is introduced and the examining telescope inserted. A preliminary survey of the vesical orifice and prostatic urethra is important; the verumontanum must be visualized, as no tissue should be removed below that point. The telescope is then withdrawn and the working unit is inserted into the sheath. In obstruction of the lateral lobe type, resection is begun high on the vesical aspect and continued downward in tiers toward the inferior margin of the internal vesical orifice. A segment of obstructing tissue is engaged in the fenestrum, the loop lying against it at the end of the observation telescope. The cutting current is turned on by pressure on the left treadle of the foot switch and the loop engages the tissue. Bubbles of steam rise and are washed into the bladder. A slight pressure carries the loop through the tissue in from three to five seconds. The segment thus resected adheres to the electrode and is brought out by removing the working unit from the sheath. The blood vessels are immediately sealed by electrocoagulation, which is made available by pressing the right treadle on the foot switch. In this manner, the entire obstruction may be resected piece by piece.

The size of the gland determines the time required for operation. Median lobe or median bar obstruction may be removed in a few minutes, but two or three hours may be required if the gland is large and the lateral lobes greatly hypertrophied. In cases of extreme hypertrophy the nerve block anesthesia may not permit complete resection at one operation and it may be necessary to remove one lateral lobe and wait ten days or two weeks before attacking the other.

The utmost care must be exercised to find and seal each oozing or bleeding point. This will have been accomplished when the irrigating fluid returns completely clear. Hemorrhage, the accumulation of clots and resulting catheter obstruction will thus be obviated.

Postoperative Care—As local edema may produce temporary occlusion, a urethral catheter is inserted and left in situ. It may be removed, as a rule, on the second or third day; by that time the edema has sufficiently subsided, the bladder function is normal, and there is no residual urine.

Analysis of Cases—My experience with this method of treating prostatic obstruction began in 1931 and has been limited entirely to private cases. Nineteen resections have been performed on nineteen patients, none so far having required more than one sitting. It has not been found necessary to repeat the operation, although it was expected that the obstruction might recur in the cases of cancer of the prostate. In three patients the growth was malignant; in the remaining sixteen it was benign, as shown by the following table:

Benign hypertrophy, large lateral lobes	8
Benign hypertrophy, lateral and median lobes	2
Benign hypertrophy, median lobe only	1
Benign hypertrophy, lateral and anterior lobe	1
Cicatricial contracture of the vesical neck (previous prostatectomy)	2
Recurrent prostatic obstruction, benign (previous prostatectomy)	1
Prostatic sclerosis with obstructing bar	1

The average age of the entire group was 66.7 years. Three patients were 80 years of age or above.

When first seen, thirteen were either depending upon catheter drainage or were suffering from acute retention. Two had large, chronically over-distended bladders with incontinence of the dribbling overflow, requiring gradual decompression. Three had been subjected to a previous suprapubic prostatectomy 13 years, 5 years, and 5 months earlier, respectively, with recurrence of the obstruction.

Residual urine was present in all of the 19 cases, varying from 90 c.c. to complete retention. Continuous urethral catheter drainage was employed prior to operation in 13 cases, varying from 6 to 21 days, or an average of 11.7 days. Two patients having residual urine of 90 c.c. and 300 c.c. were prepared by intermittent catheterization and bladder lavage. Three were subjected to a preliminary suprapubic cystostomy 75, 58, and 32 days, respectively, before resection. One patient had a persistent suprapubic fistula following a prostatectomy elsewhere five months before; he was prepared by inserting a catheter through the fistula into the bladder, where it was allowed to remain for nine days before resection.

In every case the renal function was brought to the maximum of improvement as indicated by estimation of the nonprotein nitrogen content of the blood and the excretion of phenolsulphonphthalein during a two hour period, the specimens having been collected at 30 minute intervals. The toilet of the bladder is of prime importance; insofar as is possible, any existing urinary infection should be eliminated. Pyelonephritis, so commonly associated, should be controlled.

Six patients presented serious complicating diseases which rendered the operation unusually hazardous. One developed an acute gangrenous cholecystitis, which required surgical interference during preliminary treatment. One had an acute perforation of a duodenal ulcer on admission to the hospital. Another had extensive, active, bilateral pulmonary tuberculosis; one had pernicious anemia; one had diabetes mellitus, and one had generalized mestastases from carcinoma of the prostate.

The time of the operation varied from 30 minutes to two hours, averaging one hour and nine minutes. The use of the larger (28-F) sheath, with its correspondingly larger loop electrode permitted the removal of larger segments of tissue and thus shortened the actual time of operation.

The amount of tissue resected varied from 1.2 gm. to 15.4 gm. (Fig. 4), the average being 7 gm. In the two cases of postoperative contracture of the vesical neck, sufficient cicatricial tissue was removed to abolish the obstruction. This totaled 1.8 gm. in one case and 1.2 gm. in the other.

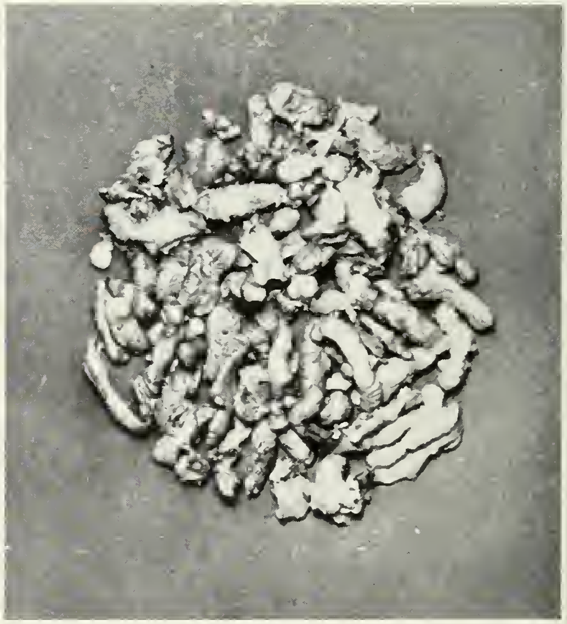

Fig. 4

In 16 cases an in-dwelling catheter was left in place following the operation and was removed 24 to 72 hours later. Hemorrhage was so slight and so effectively controlled in two that the usual postoperative catheter drainage was omitted. These patients micturated normally at once, suffered no reaction, and were discharged 36 and 48 hours respectively following operation.

Complications—There is no doubt in my mind that preliminary use of the urethral catheter over a sufficient period of time increases tolerance to instrumentation, establishes immunity to infection, and fortifies the patient against a febrile reaction (urethral fever) which is so prone to follow any intravesical surgical procedure. It is also probable that the cutting and coagulating currents employed in the operation seal off the lymphatics in the field and limit the spread of infection and the absorption of toxic products from the resected area. It is well known that those patients with sterile urine who are operated upon immediately, without the advantage of preliminary catheter drainage, suffer the most violent reactions; after prostatectomy the outcome is often fatal. It is my firm belief that this group should always have the same careful preparation as those with gross urinary infection. At any rate, these principles prevailed in the series under discussion and probably explain the relatively low incidence of postoperative reactions.

Two patients suffered no reaction whatever; the temperature and pulse remained normal following operation. In 8 cases the reaction was mild, characterized by a maximum temperature of 100 to 101 within the first 24 hours, and prompt return to normal. In six the reaction was considered moderate; the temperature reached as high as 102, but returned to normal by lysis during the next two or three days. Three patients suffered unusually severe reactions: rigors, fever of 103 to 105, and persistent hiccoughing lasted a week or more. Two of these had suprapubic drainage, one for 9 days and the other for 32 days, and the third had continuous urethral catheter drainage for 14 days before resection. The stormy convalescence experienced by these three was wholly unexpected, as there was every indication that adequate preliminary preparation had been carried out. In all, the renal function was normal, although the poor general condition of one (who had cancer of the prostate with generalized metastases) was recognized as an unfavorable factor.

Epididymitis developed in four cases, but soon responded to appropriate treatment. Ligation of the vasa was not employed to prevent epididymitis, but an incidence of this complication in 20 per cent of the cases would seem to indicate that a preliminary ligation was the vasa is warranted.

There was no appreciable postoperative hemorrhage in any case. This may be attributed to the extreme care used in sealing all bleeding points at the time of operation and, of even greater importance, the use of true electro-coagulation to control bleeding, which was made possible by the Davis-Bovie transformer. One patient passed a small amount of bright blood three weeks after returning home and a small amount of clot was evacuated by catheter by his home physician. For a period of 12 to 24 hours the urine is usually pink or perhaps well colored with blood, but bleeding sufficient to cause clot formation and coagulum in the receptacle has not been encountered.

Postoperative Hospitalization—After removal of the catheter, if the bladder function is normal and the patient's general condition satisfactory, he is allowed up and about. Twenty-four hours later, if his progress is still satisfactory, he is discharged from the hospital. In our series the period of postoperative hospital confinement has been from 36 hours to 14 days, with the exception of one patient whose case was complicated by a large vesical diverticulum and atony of the bladder. Section of the presacral nerve and a secondary suprapubic removal of the diverticulum was performed 53 days later, followed by recovery. Excluding this case, the average time in the hospital for the series was 6.2 days. When one compares the period of hospitalization after prostatectomy, which averaged 53 days in a group of 25 patients whose records were selected at random from the files of the Baptist Memorial Hospital at Memphis, the economical advantages of transurethral resection are obvious. The saving of the expense of approximately seven weeks in the hospital, with special nursing care in addition, is an item of considerable import to these patients, most of whom have reached the non-productive or even dependent period of life.

Mortality—Among the 16 benign cases there have been no deaths, although, as previously mentioned, 6 of the patients were poor risks for any operation. One patient having a cancer of the prostate with extensive metastases had been wearing a suprapubic tube and was extremely uncomfortable with this provision for drainage. The tube had been inserted elsewhere as the first stage of a prostatectomy. The malignancy evidently was not recognized, as a suprapubic prostatectomy would have been worse than useless. The roentgenogram disclosed extensive metastases throughout the bones of the spine and pelvis. The suprapubic drain had been in place 32 days, and renal function was normal, as indicated by a nonprotein nitrogen of 28.5 mg. for each 100 c.c. of blood. The urine was grossly infected, but cleared up rapidly after a few irrigations of the bladder. Notwithstanding the widespread metastases and his poor general condition, it was decided to resect enough of the malignant prostate to afford relief of the obstruction and permit removal of the tube. About 5.5 gm. of tissue was resected. He did not do well from the start. A sharp reaction soon followed. Rigors and fever, as high as 104, recurred daily, and oliguria and uremia soon developed. The suprapubic tube was never removed. There were definite signs of pneumonia on the seventh day and he died ten days following the operation. This represents the only mortality and is directly attributable to poor judgment in employing the operation when the patient was not in condition for any kind of surgical treatment.

Results—The permanency of relief from obstructive symptoms following prostatic resection is indicated by the results reported by Davis. After an experience of over 300 cases, only 6 have required the removal of additional tissue; these were among the early cases and he believes that with the imperfect instrument in use at that time insufficient tissue was resected. About six years have elapsed, however, since his first cases were treated, and recurrences at this time are unlikely.

All the patients in our group could empty the bladder completely and without difficulty upon discharge from the hospital. The two patients with postoperative contracture of the vesical neck have had a return of the difficulty and require the occasional passage of a sound. Two patients had a tendency to incontinence for two or three weeks following operation, but this gradually subsided and normal control returned. In all the remaining cases, including the two malignancies, the functional results have been all that could be desired. Most of the patients have returned for observation upon request. With one exception, no residual urine has been found. One of the patients having cancer of the prostate had one ounce of residual urine four months following operation, but had no difficulty in urinating.

Summary—All types of prostatic obstruction, both benign and malignant, are amenable to treatment by the Stern-Davis method. It is conservatively estimated that more than 90 per cent of cases may be relieved by this procedure.

Proper preliminary treatment is largely responsible for the success of the operation; slight risk is incurred if preoperative measures are adequate. No fatality or serious complication followed the surgical procedure in Davis' series of over 300 resections. In my own experience, the only fatality was in a case of cancer of the prostate with multiple metastases.

As compared with open operation, the functional results are equally satisfactory, the period of convalescence is materially reduced, being less than one week on the average, the hazard is practically negligible, and permanent relief may be expected.

BIBLIOGRAPHY

1. Stern, M.: Resection of Obstructions at Vesical Orifice; New Instruments and New Method. Jour. Amer. Med. Assn., 1926, lxxxvii, 1726-1729.

2. Davis, T. M.: Prostate Operation; Prospects of the Patient with Prostatic Disease in Prostatectomy vs. Resection. Jour. Amer. Med. Assn., 1931, xcvii, 1674-1679.

3. Moore, T. D.: Factors Which Hasten Convalescence Following Prostatectomy. Memphis Med. Jour., 1926, iii, 37-41.

LEGENDS

Fig. 1. Component parts of the Stern-Davis resectoscope. (a) Sheath, (b) Obturator, (c) Examining telescope, (d) Operating telescope, (e) Working unit.

Fig. 2. Working unit, including (a) Wire loop electrode, (b) Operating telescope, (c) Incandescent lamp, (d) Small water conduit (not showing).

Fig. 3. The Davis-Bovie transformer, including two units, one supplying the cutting current and the other electrocoagulation.

Fig. 4. Tissue weighing 15.4 gm., comprising 78 segments removed in a case of benign hypertrophy of the prostate with large lateral lobes.

DISCUSSION

DR. TOM BARRY (Knoxville): The beautiful way that Dr. Moore has presented this paper would, I fear, have you think that this procedure is as simple as he has pictured it. It is a simple procedure, but it is not quite that simple. Any procedure which digresses so far from the accepted method of approach, of course, should be criticized until such time has elapsed as the final results can be evaluated. Personally, I belong to one of the enthusiastic groups in the treatment of prostatic obstruction by resection.

I am quite sure that if all of us told the truth, and we included all the drainage cases of prostatic obstruction, our mortality would be not much less than 20 per cent. If we can substitute for this a procedure which carried a negligible mortality with a result which so far as we know compares very favorably with the other, at an economical saving, we should at least give it consideration.

The fact that you do incompletely remove the prostate is not a valid objection, because neither by the suprapubic nor the perineal route is a prostate completely removed, and there are many cases on record of both the perineal and suprapubic prostatectomy being followed by recurrence.

The fact that the prostatic will consider this a minor operation is one of the great assets of this procedure, for the reason that instead of waiting until he is in almost a moribund condition, he will submit to this procedure much earlier.

Dr. Moore did not mention impotence. Of course, in the majority of cases that has nothing to do with it, but as a matter of fact there are a few who will not consider the operation just from that viewpoint alone. In this procedure that impotence is not any greater afterwards than before.

As far as the instruments are concerned, both the McCarthy and the Davis instruments have been used. Personally, I prefer the former. I think it is a matter of personal preference. We get accustomed to using one and can use it better. The fact that you can resect larger pieces with the McCarthy instrument appeals to me.

Another advantage that I think the McCarthy instrument has over the Davis is that you can put the wire directly on the bleeding point; in a lot of cases where the vessel has been inaccessible it has been hard for me to get the Davis loop right on the bleeding point.

Hemorrhage will be a factor in this as well as in any other type of relief of prostatic obstruction. We have had about thirty cases in nine or ten months with this method. We had one case that was returned to the ward perfectly clear. In some two hours he had a secondary hemorrhage and before we could get the bleeding stopped, he died of an embolism, because his pulse at that time was perfectly good although he had bled considerably.

In trans-sacral or spinal or any other kind of anesthesia, probably with the exception of ether, you get some drop in blood pressure, and I think that drop in blood pressure accounts for the fact that you return them to bed not bleeding, and when the blood pressure comes up they will begin to bleed some. It has not, except in that case, been an item.

The preparation of a patient is very similar to that in prostatectomy, except not so extended. The shock is not so great in this procedure and you do not expect so much mortality.

I think urotropin given by mouth three or four days before and until some days after the catheter is taken out is probably of some advantage. Practically all the patients that I have had have been incontinent for two or three days after the catheter was taken out. This incontinence is usually relieved after the third or fourth day. In some of our cases, after we have taken out the catheter they have been unable to void except very small quantities. If they were catheterized for two or three days after that they emptied their bladders completely, showing that the obstruction was then not purely prostatic, but one of edema. In some cases in which we have had the best final results they have carried residual urine for four or five weeks and then after the edema and infection receded they emptied the bladder completely.

In carcinoma of the prostate I don't think there is any doubt but that this is the procedure of choice. You do not run the hazard of mestastasizing your growth and do not subject the patient to permanent suprapubic drain, which is almost next to death.

DR. JOSEPH H. SMITH (Memphis): A substitution operation for suprapubic and perineal prostatectomy has been the aim of urologists for more than a hundred years. Mercier was one of the first to introduce an instrument for transurethral incision of the obstructing prostate. Bottini in 1874, in an attempt to avoid bleeding, incorporated a cutting blade operated by a galvanocautery. It was not until 1909 that Young devised his punch instrument, by which method he punched out a part of the obstructing prostate instead of incising or enucleating it. Later on Stevens and Luys used the high frequency current for the destruction of prostatic bars, and in 1920 Caulk, of St. Louis, introduced his cautery punch, which was another step forward in the handling of this type of case.

In 1926 Stearne introduced the instrument which he called a resectoscope, which later was improved by McCarthy. The loop which McCarthy introduced was markedly improved by Dr. T. M. Davis, one of our own Southern boys of North Carolina. Credit for popularization of the intra-urethral resection of the prostate is largely due not only to his improvement of the instrument, but to his continual advocacy of its use before the urologists of the country.

Whether or not the intra-urethral resection of prostatic obstruction shall eventually supersede the old-time perineal or suprapubic prostatectomy is a question that only time can tell. So far the glowing accounts of men who have used this method extensively are certainly encouraging, and the mortality seemingly has been markedly reduced.

We must not lose sight of the fact that in spite of the enthusiastic reports on all sides for the intra-urethral method, we still have to hold in mind that the removal of the tumor in hypertrophy of the prostate is to be considered secondary in importance to the preparation of the patient for the operation by whatever method you might desire to use. The importance of the preparation of the patient by whatever method bears first significance, and the post-operative care still bears the same significance as previously.

Blood chemistry has been one of the greatest boons to urologists as an indication as to when to operate and when not to operate. There are a number of authorities today who still fear the indwelling catheter which is usually used in the preparation for the intra-urethral resection. Of course, the patient can be prepared by the former suprapubic cystotomy for this operation. Catheter irritation and cellular infection with subsequent blood stream infection is not an infrequent occurrence with any method, and is often a dangerous consequence.

We also have to consider as one of the main causes of the high mortality in suprapubic cystotomy in men of this age, not only cellular infection, but the shock caused by hemorrhage, and also uremia.

DR. L. R. GAYDEN (Nashville): I could not add anything else to the paper, I am sure, and if I could refer to these men as my instructors in this particular line of work, I should be glad.

I should like to bring up two questions that I am sure Dr. Moore can answer. In what cases is he doing the punch, and what does he see when these cases return for the second punch operation?

I speak from the experience that my brother and I have had in clinical work, as well as in our private practice. The preparation of the patient is a very important thing. The indwelling catheter, as Dr. Smith has said, is the method of choice. There is also, as he has stated, the suprapubic method of drainage before a punch is done. We use the Braasch method of resection, and we have not had enough cases to know just what we are going to see when these cases return for the second punch.

As Dr. Livermore said yesterday morning in his paper, some cases have been punched as many as five or six or seven times, and so on. I am wondering just what we are going to find when these cases return for that third or fourth or fifth resection.

In the preparation of the patient, when we do a suprapubic drainage of the bladder previous to a punch operation, we don't find the same that we found when we first went in, of course; the drainage has been established and the gland has been reduced in size. I really prefer the catheter method to the other method.

A colored man who entered the Charity Hospital was prepared in the normal way and had the punch operation performed. He entered on the first day of January, and is still there, by the way. He had enough gland removed. One of the other men in the practice had removed it, and I am sure that there was enough removed. However, he had the same exaggerated symptoms of frequency, and so on, that he had previous to the punch. We thought due to the big bilateral lobes it might be possible to see what was there, so we went back and explored and took out a big gland in toto, and the man will probably leave the hospital in a few days.

DR. THOMAS D. MOORE (Closing): I wish to express my appreciation for this liberal discussion. Several points have been brought up which I shall discuss briefly.

I am sorry if this presentation has conveyed the idea that trans-urethral prostatic resection is a simple procedure or a minor operation. As those who have pioneered in this work have amply demonstrated, it is not to be considered lightly nor attempted by the occasional operator. A thorough knowledge of the vesical neck is essential in deciding preoperatively just what should be done, and unless proper preliminary treatment is carried out, particularly bladder drainage, and renal function and associated urinary infection is improved to the maximum extent, the hazard is almost as great as in prostatectomy.

Dr. Gayden asked what patients should have the punch operation and how often punch operations are done. I hope this method will not be confused with the punch operation. The two are about as different as a horse and buggy from a motor car.

As to whether hemorrhage occurs, no statistics are yet available for some of the methods being employed. In Davis' experience of nearly 400 cases, in which he used the equipment I have shown, hemorrhage was practically unknown. I believe this was largely attributable to the employment of true electrocoagulation; that is, of the d'Arsonval type—a damped current, one produced by spark gap. Some of the transformers being used have no spark gap; they have the pliotron tube, which delivers a beautiful cutting current, but is not true electrocoagulation of the d'Arsonval type and does not control hemorrhage effectively.

The idea of taking patients back repeatedly to resect more tissue reminds me of the story of the little boy who cut the puppy's tail off a little at a time in order to make it easy. If patients are properly prepared, sufficient tissue can be removed at one sitting. It is not necessary to take them back to the operating room for further resection.

As to the permanency of the results, this cannot yet be determined. The fact, however, that approximately six years have elapsed since patients were first treated by this means, with practically no recurrences (only 6 in Davis' 400 cases) is evidence that the results are probably permanent. In my brief experience with the operation I have had no recurrence of obstruction. One patient had one ounce of residual urine at the end of four months; he had cancer of the prostate and recurrence might possibly be anticipated.

Dr. Barry pointed out that probably one of the great advantages of this method of treatment will be in that patients will apply earlier for treatment. There is a well established idea in the public mind that about one patient in three who has prostatectomy will succumb. We know that with the improved methods employed in the past few years the mortality rate of prostatectomy should not exceed 5 per cent. Since the average man still believes that prostatectomy is very dangerous, however, he defers treatment until driven to have something done. When he learns that by the new method the risk is probably less than 1 per cent, and only a few days of postoperative hospitalization are necessary, he will apply for treatment earlier and we will see no more of the disastrous effects of neglected obstructions.

THE SURGICAL TREATMENT OF FAR-ADVANCED CASES OF PULMONARY TUBERCULOSIS †

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IT WAS ONLY FIFTY YEARS AGO that Koch discovered the tubercle bacillus. However, prior to this time, in 1821, James Carson of Liverpool had recommended that the tuberculous lung be compressed by surgical procedures. Detweiler of Switzerland advocated sanatorium treatment in the eighteen seventies. Forlanini of Pavia utilized artificial pneumothorax as a therapeutic aid in pulmonary tuberculosis in 1882. In 1885, de Cerenville of Lausanne removed portions of the ribs anteriorly in an effort to compress pulmonary cavities. Brauer and Friedrich recommended the removal of much longer portions of ribs. Gourdet of Nantes in 1885 showed that greater compression of empyema cavities could be obtained by removing portions of the ribs posteriorly extending to the tips of the transverse processes of the vertebræ, thereby including the angles. Wilms of Heidelberg in 1911 demonstrated the value of the principles of Gourdet in the treatment of individuals with tuberculosis. Sauerbruch of Berlin practiced many different types of operations aiming at collapse of lungs. He claimed credit for many of the new procedures, but in most instances these claims are without foundation. The credit for the modern posterior extra-pleural thoracoplasty should go to Gourdet and to Wilms.

In 1910 Tuffier of Paris freed the parietal pleura over the apex of a lung and placed extrapleurally a free fat graft. Various other materials have subsequently been used. Stuertz of Cologne in 1911 divided the phrenic nerve thereby causing the diaphragm to rise and resulting in compression of the lung. In more recent years evulsion of the nerve has been frequently used because there is often an accessory nerve and because a permanent paralysis is sometimes desired. Jacobæus of Stockholm in 1913 advised the division of adhesions which were preventing the collapse of lungs by artificial pneumothorax treatments by the use of the thoracoscope and cautery. Warstat combined removal of the intercostal nerves with phrenicotomy in the treatment of pulmonary tuberculosis. Alexander has paralyzed the intercostal nerves by the injection of alcohol. Schlæpfer has suggested ligation of the pulmonary artery to the diseased lung but this has not been tried in the human. Gale and Middleton have recommended scaleniotomy for the immobilization and compression of lesions in the apex.

All of the procedures that have been enumerated are aimed at compression and rest of diseased lung tissue. Rest of the lungs is difficult because of the movements which accompany the act of breathing. Compression of the lungs is difficult because of the bony thorax.

The surgery of pulmonary tuberculosis is really in its infancy. Alexander states that between the years 1918 and 1925 there were reported in the United States only 300 cases of pulmonary tuberculosis in which surgery was carried out. During the past seven years, probably fifty times this number of operations have been performed in this country on individuals with tuberculosis.

I shall report to you today by lantern slides four cases of far-advanced pulmonary tuberculosis in which various surgical procedures were performed. These cases were selected from 103 individuals with tuberculosis who have been treated by surgical means in the Vanderbilt University Hospital during the past five years. They are chosen because of the variety of problems which they presented.

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†Read before Tennessee State Medical Association, Memphis, April 13, 1932.

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Case I. Patient, H. C. C., age 31, first entered the hospital in December, 1929. He gave a history of hemoptyses, productive cough, night sweats and afternoon elevation of temperature over a period of two years. X-ray at that time showed active bilateral pulmonary tuberculosis, much more marked on the left side. There were several areas on the right side which appeared to have healed. After remaining in bed for a while, a phrenicotomy was performed on the left side. A definite rise in the diaphragm resulted. The right side showed definite improvement with continued rest in bed. Artificial pneumothorax was unsuccessfully attempted on the left side. In October, 1930, the lesions in the right lung had improved markedly, the lesions in the left lung were approximately in the same condition as when the patient was first seen. At this time it was decided that a thoracoplasty should be performed. Portions of the upper six ribs were removed posteriorly.

In March, 1931, the patient's condition was distinctly improved; the lesions in the right lung showed further evidence of healing, but he still had signs of activity in the left lung and portions of the seventh, eighth, ninth, tenth and eleventh ribs were removed posteriorly. The patient continued to improve following this operation except for the fact that he developed an acute duodenal ulcer from which hemorrhage occurred. This was treated conservatively.

The patient again entered the hospital in September, 1931, because he continued to have a small amount of expectoration which contained tubercle bacilli. The right lung gave no evidence of activity. At this time an antero-lateral costectomy was performed, the remaining portions of ribs, third to tenth, being removed. Several weeks following this operation the patient became afebrile, sputum became negative and cough practically disappeared. The deformity of the chest was not very great. At the present time he takes a small amount of exercise and seems to be in very good condition.

Case II. Mrs. M. B. McW., 22 years of age, entered the hospital in January, 1930. A productive cough appeared two years prior to this time. Rest in bed had not resulted in an improvement in her condition. She had hemoptyses on several occasions. X-ray at the time of entrance to the hospital showed healed lesions in the left lung and several cavities in the right lung. Artificial pneumothorax treatments were begun, but the cavities could not be completely collapsed due to several adhesions which were holding them open. In April, 1930, these adhesions were divided by intra-pleural pneumolysis. The cavities were completely collapsed by continued pneumothorax treatments following this operation, but the patient developed a secondarily infected empyema. This probably resulted from the cutting across of diseased lung tissue. The patient became quite ill, and the empyema cavity was drained through a small incision in the anterior axillary line. The cavity was treated with Dakin's solution. The patient improved, and in December, 1930, the phrenic nerve was evulsed. The empyema cavity persisted, and in January, 1931, a posterior extra-pleural thoracoplasty was performed, portions of the upper seven ribs being removed. Three weeks later portions of the eighth, ninth and tenth ribs were removed. These operations resulted in an obliteration of the empyema cavity and in a marked collapse of the lung. The patient is afebrile and sputum free at the present time. Due to the fact that she becomes fatigued very easily, her activities are still quite restricted. The deformity is barely noticeable.

Case III. Mrs. R. J., age 20, entered the hospital in December, 1931. Two and a half years previously while working in a sanatorium it was found that she had tuberculosis. She had a large cavity in the apex of the right lung, with rather diffuse involvement of the remaining portion of the lung. She was given artificial pneumothorax treatments. During the latter part of the treatments she developed fluid in the pleural cavity, which became secondarily infected. It was at this time that she was admitted to this hospital. Multiple fistulæ appeared at the sites at which the needle punctures had been made. Shortly following her admission to the hospital a small portion of the eighth rib was resected in the anterior axillary line and a tube was placed in. A small amount of negative pressure was used. Dakin's irrigations were employed. A week later the right phrenic nerve was evulsed.

In February, 1931, the lung had expanded slightly, but a large secondarily infested empyema cavity remained. Through a posterior incision portions of the upper seven ribs were removed. One month later portions of the eighth, ninth, tenth and eleventh ribs were removed posteriorly. The empyema cavity diminished greatly in size, but did not entirely disappear. The drainage tube was still kept in place.

In August, 1931, a small residual empyema cavity remained. Through an incision in the midaxillary line the remaining portions of the third, fourth, fifth, sixth and seventh ribs were removed subperiosteally. Following this operation the cavity became completely obliterated. At the present time the patient appears to be entirely well. The deformity of the chest is not marked.

Case IV. Mrs. E. P. J., 25 years of age, had pneumothorax treatments for pulmonary tuberculosis in 1924. Good collapse of the lung was obtained, and on allowing the lung to expand the disease appeared to be healed. She remained in good condition until 1928, when, during the latter part of pregnancy, the tuberculosis again became active. A Cesarean section was performed. Following her recovery from the operation, artificial pneumothorax treatments were attempted on the right side, the disease being limited to this side. This was abandoned after several attempts, as the pleural cavity had been obliterated by adhesions. In August, 1928, the right phrenic nerve was evulsed. Considerable rise in the diaphragm followed this procedure. The cavity which was present in the right apex persisted, and in March, 1929, portions of the upper five ribs were removed posteriorly. Two weeks later portions of the sixth, seventh, eighth and ninth ribs were removed. The patient improved markedly following these operations, but they did not result in complete closure of the cavity. Hence, in February, 1931, an antero-lateral costectomy was performed, the remaining portions of the upper six ribs being removed. This resulted in a closure of the cavity and a disappearance of fever and sputum. At the present time the patient is afebrile and sputum free. She tires easily, but otherwise seems to be well. The deformity is barely noticeable when the patient is fully dressed.

I do not wish to leave the impression that it is necessary to carry out all of these procedures in most patients with pulmonary tuberculosis in which surgery is indicated. As has been stated, these patients are reported because of the rather unusual difficulties that they presented. They illustrated the use of rest in bed, artificial pneumothorax, phrenic neurectomy, thoracostomy, intrapleural pneumolysis, posterior extrapleural thoracoplasty and antero-lateral costectomy. Similar encouraging results that have been reported from many places have altered considerably our ideas concerning the prognosis in advanced cases of pulmonary tuberculosis.

I wish to thank Dr. Hollis Johnson and Dr. I. A. Bigger for the part they took in the care of these patients.

DISCUSSION

DR. HORTON CASPARIS (Nashville): For a long time we have known of the importance of rest in the treatment of tuberculosis. In emphasizing rest we are concerned primarily with rest of the affected part. But in the medical treatment of pulmonary tuberculosis it is not possible to secure complete rest of the lungs, for the patient must breathe. However, we can reduce the mental and physical activity of the patient to the extent that there will be minimal demand made on the lungs for the exchange of waste carbon dioxide for oxygen, and thus approach complete rest of the affected part. But there are a number of patients who cannot or will not coöperate in this respect to the extent that is necessary. Also, there are those who have such extensive involvement of the lungs or whose tuberculosis is rapidly advancing in whom this mere reduction in the activity of the lungs is not adequate. In some of those then with more serious or extensive tuberculous involvement practically complete rest of the lung is necessary, and Doctor Blalock has shown us how through surgical means this can be accomplished. He has discussed chiefly the major surgical procedure of removal of the ribs to permit a collapse of the chest. Of course in the earlier stages of tuberculosis the lesser procedures of cutting the phrenic nerve to produce a paralysis of the diaphragm, and pneumothorax for collapsing the lung, if it is not adherent, will suffice. These latter methods, in my opinion, should be used more than they are in many of the early cases, especially in those patients who we find are not going to coöperate sufficiently to secure the proper rest of the lungs.

I have had the opportunity to observe some of the patients about whom Doctor Blalock has told us, and it is quite remarkable how some of these which we would have said a few years ago were hopelessly advanced can be put back on their feet, symptom free, and given a new lease on life. My one regret is that there are not more surgeons doing this type of work, and that more of those patients for whom such procedures are suitable do not know that these things can be accomplished, for this type of work does more than anything else to raise the morale both of the physician and of the people in the whole tuberculosis problem. In other words, as accomplishments such as these multiply, hope will be stimulated and we shall be able to get a brand of coöperation in all phases of tuberculosis work that we have never had before. But this will follow only to the extent that more physicians train themselves to do these things, and to the extent that all available means are used to educate the people to take advantage of what can be done.

PERITRACHEAL ABSCESS*

Wm. D. Stinson, M.D., Memphis

As the name implies, a peritracheal abscess may be any extratracheal collection of pus with three possible origins: 1, the trachea itself; 2, descending from a superior source; or 3, ascending from an inferior source. Thus a classification such as follows suggests itself:

A. Primary
  1. Traumatic rupture of trachea.
  2. No gross lesion of trachea.
B. Descending
  1. Peritonsillar.
  2. Retropharyngeal.
C. Ascending
  1. Anterior mediastinum.
  2. Empyema.

Several years ago I saw a negro patient with the following history:

Three weeks previously a peritonsillar abscess was opened at the Memphis General Hospital resulting in the evacuation of a large quantity of pus. Marked relief was obtained and the following day he was discharged. Throat continued slightly sore until one week later he woke up in the night choking. He stated that he jumped out of bed and ran as hard as he could up the street with no particular objective in mind. About a block from home something "busted" in his throat and he "vomited" a quantity of pus, after which he breathed freely.

Two days before his appearance at the clinic a swelling appeared between the larynx and the sternum. Examination revealed a large abscess about the size of a hen egg pointing externally. Evacuation resulted in complete relief. This is a case of peritracheal abscess descending from an original peritonsillar abscess.

March, 1928, Dr. Chapman, of Brownsville, referred a case with a history of dyspnea following a sore throat — ample diptheria antitoxin had been given with no relief. Intudation was performed and the tube removed in forty-eight hours. As there was considerable blocking of the intubation tube a tracheotomy was performed. As this did not relieve the child much the tracheotomy tube was removed and the patient again intubated and sent to Memphis.

With the objective of extubation in mind, reopening of the tracheotomy wound and extending it as low as possible was decided upon. In carrying the incision downward an abscess was discovered deep in the suprasternal notch. Evacuation of this resulted in marked improvement of symptoms but the child died suddenly early the following morning.

In this case the abscess may have been the primary pathology producing the dyspnea, or may have developed from the tracheotomy. At least it falls under the division A of our classification, that is, a primary peritracheal abscess.

The third case to be cited exemplifies the real substance of this paper, that is a primary peritracheal abscess of sudden onset with no gross lesion of the trachea or history of an abscess either above or below.

A child, age 2, referred by Dr. Eugene Rosamond, May 4, 1930. Three days previously while playing on the floor began to cough—no previous illness except a slight cold. During the night she had severe croup. The next morning mother noted some bulging of the neck just above the suprasternal notch. As the child's condition gradually grew more serious she was brought to Memphis.

Examination at this time showed an acutely ill child, temperature 103—moderate stridor with a clear voice. The suprasternal notch was full but not bulging—the skin over this area was quite tense and the tissues definitely resistant to palpation. The superficial vessels of the neck were engorged. The trachea was pushed definitely to the right. Chest examination showed no air passing into right lung. The X-ray was puzzling but was interpreted as a complete atelectasis.

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*Read before the Eye, Ear, Nose, and Throat Section of the Tennessee State Medical Association, Memphis, April 12, 13, 14, 1932.

On the strength of a case reported in the March issue of the Archives of Otolaryngology by Lyman Richards a diagnosis of peritracheal abscess was made and operation advised.

Within a midline incision the fascia of the neck was revealed as very tense and brawny. Incision through this on the left side of the trachea exposed a large abscess which could be followed across the midline to the right side. Unfortunately the pus which had the odor of colon infection was not cultured.

There was an immediate and marked improvement in symptoms. The temperature declined to 99-100, respiration became free and an X-ray the following day showed a marked improvement in the aeration of the right lung.

The child continued to improve for two days—on the morning of the third day moist dressings were ordered as the wound margins were rather markedly inflamed. When I returned to see the child that afternoon the respirations were accompanied by a "sloshing" sound, fluid being pumped back and forth through the incision with each respiratory cycle. The temperature had arisen and the child died the following morning of an acute mediastinitis. My conclusion was that the dressings were dripping wet instead of moist and that the presence of this fluid in the wound plus the pumping action of the chest broke down all barriers to the infection, resulting in a generalized mediastinitis.

The summary of this paper is that a primary peritracheal abscess may develop with sudden onset without extension from any other source.

THE TREATMENT OF CHRONIC SUPPURATIVE OTITIS MEDIA WITH IODIN POWDER.*

Guy M. Maness, M.D., Nashville

THE multiple methods and drugs that have been used in the treatment of chronic purulent otitis media immediately suggests a disease that is refractive to treatment. There has been no treatment that has given universal success in obtaining dry ears. This probably will not occur, but if certain well known surgical principles of the treatment of pyogenic infections are constantly borne in mind while treating chronic otorrheas, a remarkable degree of success will be obtained. There should be: (1) adequate drainage, (2) local and general resistance to infection, (3) an efficient germicide, and (4) prevention of re-infection.

Adequate drainage is of the utmost importance. The most satisfactory method of obtaining drainage, and at the same time remove diseased tissue, is by doing a radical mastoid operation, but, needless to say, it would be folly to advise a radical, or even a modified radical operation for all cases of chronic suppurative otitis media. The objects in treating the disease are preservation of hearing, prevention of complications, and relief of the disagreeable drainage. The radical operation destroys the hearing and not infrequently fails in the other two objectives. If all cases of persistent otorrheas were subjected to a radical operation, the complications would be greater than they would if no radical mastoid surgery were done. During the period between 1926 and 1932 five hundred cases of chronic otitis media have been treated in Vanderbilt University Hospital. Four of this number have been known to have died of intracranial complications. Three of this number died following radical mastoid operations but one of these three had a tuberculous mastoiditis. The other case died of a meningitis without any operative procedures.

Removal of middle ear polypi and granulations, enlargement of perforations of the drum, removal of adenoids, and freeing adhesions of the mouth of the eustachian tube are other well known methods of obtaining drainage. Surgical diathermy of lymphoid tissue around the mouth of the eustachian tube as advocated by Hurd (1) and the method of attic drainage as used by Babbitt (2) seem to be very feasible methods of obtaining better drainage.

The resistance of the mucous membrane in the middle ear is greatly reduced by irrigations. One of the best ways to insure the continuation of a chronic otorrhea is to instruct the patient to irrigate the ear at frequent intervals. The mucosa will become water-logged, the epithelium becomes macerated and desquamates. These dead cells furnish an excellent media for growth of bacteria. The mucous membrane will have a lowered vitality and the phagocytic power of the cells greatly reduced. The general resistance of the patient should be improved by a proper hygienic and nutritional regime. Chronic otitis media is much more prevalent among people who have deficient diets and in those who live in poor hygienic surroundings.

An efficient germicide must be one that will not destroy tissue, one that will penetrate to all diseased tissue areas and one that will not reduce the vitality of the mucous membrane. For the treatment of chronic otorrheas a powder is more ideal than a solution, providing the powder does not cake and obstruct the drainage. The iodin powder (Sulzberger) first employed by Dr. Lederman (3) meets the above requirements better than anything I have used. The powder is a preparation containing boric acid and iodin. The powder dissolves when it comes in contact with the secretions, liberating free iodin which penetrates into the diseased areas of the middle ear. The powder does not cake and obstruct drainage. Of course, if there is no drainage, the powder will not dissolve.

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*From the Department of Surgery of Vanderbilt Hospital. Read before the Eye, Ear, Nose, and Throat Section of the Tennessee State Medical Association, Memphis, April 12-13, 1932.

I have seen one case who had had the powder in the ear for one year. She had been warned against getting any water in the ear. The powder was removed and the perforation of the membrani tympani was found to have closed.

Obtaining a dry ear in a chronic otorrhea is no guarantee that the ear will not drain again. If all disease of the nasal passages, para-nasal sinuses, naso-pharynx, and especially acute upper respiratory infections could be eliminated, there would be very few recurrences. Careful and definite instructions should be given to prevent reinfection thru the perforated drum. It is not sufficient to instruct a patient not to irrigate an ear, but detailed directions against swimming, use of various drops in the ear, and especially against getting water in the ears while taking tub or shower baths, or washing their hair should be given.

I am reporting a series of sixty-eight cases of chronic and subchronic suppurative otitis media treated with iodin powder (Sulzberger) between June, 1930, and March, 1932. There was no selection of cases. The accompanying tables will show all cases that were treated with the iodin powder. Some of them discontinued treatments before their ears were dry and some were irregular in their visits. A few had mastoid operations because it was felt that their symptoms warranted surgical intervention. The most suitable cases for treatment were those with large perforations without aural polypi or granulations. The ones with small perforations, especially the ones with a thick copious mucoid drainage were as a whole more refractive to treatment. The duration of drainage and the location of the perforation did not seem to make so much difference in obtaining dry ears.

The method of treatment consisted in:

1. Removal of polypi or granulations from the middle ear as thoroughly as possible.
2. Removal of contributary causes such as adenoids or tonsils or treatment of para-nasal sinusitis. Some patients refused to have their tonsils and adenoids removed.
3. All irrigations and medications in the ears were prohibited. Careful attention against getting water in the ears was advised.
4. All secretions were removed as thoroughly as possible from the external auditory canal and middle ear by means of cotton applicators. Gentle suction is advised as an aid to freeing the middle ear of secretions. Careful removal of all secretions possible is of vast importance if the success with the treatment is to be expected.
5. Insufflation of 2 per cent iodin powder (Sulzberger). It is important that as much of the powder as possible reaches the middle ear thru the perforation. Treatments were given two or three times weekly depending on the quantity of secretion. The more abundant the secretion the more rapidly is the powder dissolved.

Some patients complain of a moderate amount of burning in the ear after insufflation of the powder. If the burning is too great, a 10 per cent solution of cocaine may be instilled in the ear a few minutes before treatment. If this is done, the ear should be thoroughly dried before insufflating the powder.

The results in the series of sixty-eight treated are shown in the following tables. Table I shows twenty-five cases in which the tonsils and adenoids had been removed six months or more prior to starting treatment with iodin powder. The cases which had drainage of short duration were acute exacerbations of a chronic otitis media. Two cases resulted in failures to obtain dry ears. One of the two cases, E. P. P., had a dry ear for three months but the drainage has recurred and treatments seem to have little effect on the drainage.

Table II shows nine cases which had tonsils and adenoids, aural polypi or granulations removed in conjunction with treatment with iodin powder. Failures to obtain dry ears resulted in three cases which did not return for adequate treatment.

Table III shows twenty-seven cases which had no treatment other than iodin powder. Dry ears were obtained in all but two who received only three treatments each, and did not return for further treatment.

Table IV shows seven cases which had mastoid surgery done and followed with iodin powder treatments. Two of this number continue to drain. The first case, H. L. E., had one simple and two radical mastoid operations and prolonged treatment with iodin powder without any result. The drainage was always thick mucoid in character. One case, M. A., had a lateral sinus thrombosis for which the jugular was ligated and simple mastoid operation done. His ear is still draining. A radical mastoid operation is to be done in this case.

Chronic Suppurative Otitis Media Treated with Iodin Powder (Sulzberger)

Table I

Cases which tonsils and adenoids had been removed six months or more prior to starting treatment.

Case	Age	Ear	Duration of Discharge	Number of Treatments	Result	Recurrences
E.G.	13 yrs.	Left	7 yrs.	10	Dry	Dry 18 months later.
L.L.	12 yrs.	Right	11 yrs.	7	Dry	Draining 18 months later.
B.S.	21 yrs.	Right	12 yrs.	10	Dry	Dry 16 months later.
F.R.	4 yrs.	Both	4 yrs.	5	Dry	Dry 8 months later.
C.J.	20 yrs.	Right	19 yrs.	8	Dry	Dry 15 months later.
N.C.	12 yrs.	Left	1 month	4	Dry	Dry 18 months later.
T.C.	10 yrs.	Left	1 month	4	Dry	Dry 18 months later.
E.H.	8 yrs.	Right	7 yrs.	5	Dry	Dry for 1 year. Recurrence.
J.T.	13 yrs.	Right	2 yrs.	4	Dry	Dry 1 month later.
A.G.	4 yrs.	Both	3 yrs.	Right 5 Left 3	Dry	Dry 2 months later.
D.M.	10 yrs.	Left	2 yrs.	6	Dry	Dry 3 months later.
T.B.	11 yrs.	Right	1 month	2	Dry	Dry 14 months later.
M.B.	28 yrs.	Right	1 yr.	5	Dry	Dry 14 months later.
M.B.	13 yrs.	Right	1 week	1	Dry	Dry 15 months later.
O.A.	9 yrs.	Right	3 weeks	1	Dry	Dry 9 months later.
E.A.	12 yrs.	Left	1 week	1	Dry	Dry 1 month later.
V.W.A.	13 yrs.	Right	1 week	4	Dry	Did not return. Left dry.
P.K.	18 yrs.	Both	?	3	Dry	Right draining 1 year later.
B.O.	10 yrs.	Both	9 yrs.	8	Dry	Recurrence. Recurrence after 6 mos.
T.R.	7 yrs.	Left	5 yrs.	3	Dry	Dry after 2 treatments.
E.M.P.	26 yrs.	Right	6 yrs.	1	Dry	Dry 2 weeks later.
E.S.	12 yrs.	Left	4 months.	1	Dry	Dry 1 year later.
E.P.P.	10 yrs.	Right	3 yrs.	40	Draining	Was dry for 3 months.
**C.R.M.	2 yrs.	Both	1 yr.	19	Draining	Still draining.
T.J.	24 yrs.	Both	12 yrs.	10	Dry	Dry 6 months later.

**Cases which had drainage of short duration were acute exacerbations of a chronic otitis media.
*Only adenoids had been removed. Irrigations of the ears were not refrained from as advised.

Table II

Cases which had additional procedures carried out in conjunction with treatment with iodin powder.

Case	Age	Ear	Duration of Discharge	Number of Treatments	Result	Recurrences
*A.B.B.	19 yrs.	Right	4 yrs.	9	Dry	Did not return.
*M.B.	13 yrs.	Right	1 yr.	4	Dry	Dry 18 months later.
*D.M.	10 yrs.	Left	2 yrs.	6	Dry	Dry 14 months later.
*M.B.	28 yrs.	Left	1 yr.	5	Dry	Dry 16 months later.
**R.N.M.	5 yrs.	Both	4 yrs.	4	Dry	Did not return.
**R.M.M.	7 yrs.	Both	6 yrs.	5	Dry	Dry 1 year. Recurrence.
*** **W.F.G.	13 yrs.	Left	5 yrs.	5	Draining	Did not return.
***H.P.	30 yrs.	Left	3 months	4	Reduced	Did not return.
***J.W.	8 yrs.	Right	5 yrs.	2	Draining	Did not return.

*Granulations were cauterized.
**Tonsils and adenoids were removed.
***Aural polypi were excised.

Table III

CASES WHICH HAD NO TREATMENT OTHER THAN IODIN POWDER. TONSILS AND ADENOIDS HAD NOT BEEN REMOVED.

Case	Age	Ear	Duration of Discharge	Number of Treatments	Result	Recurrences
L.P.	1 yr.	Right	1 month	8	Dry	Dry 2 months later.
M.B.	13 yrs.	Right	2 yrs.	7	Dry	Did not return.
D.E.	5 yrs.	Left	1 yr.	3	Dry	Recurred 6 months later.
M.C.H.	8 yrs.	Left	2 months	9	Dry	Dry 8 months later.
C.P.W.	2 yrs.	Both	7 days	6	Dry	Dry 3 months later.
M.W.	32 yrs.	Right	1 week	1	Dry	Dry 10 weeks later.
J.D.	2 yrs.	Left	18 months	1	Dry	Dry 14 months later.
F.W.	55 yrs.	Right	1 yr.	2	Dry	Dry 10 months later. Left Dry.
R.E.S.	18 months	Both	6 months	4	Dry	Right draining 4 months later.
H.R.	37 yrs.	Both	7 months	3	Dry	Recurrence.
E.A.	53 yrs.	Both	1 month	3	Dry	Dry 1 year later.
W.E.M.	1 yr.	Left	3 months	7	Dry	Dry.
H.C.W.	2 yrs.	Both	2 months	14	Dry	Dry 8 months later.
V.M.	27 yrs.	Left	6 months	6	Dry	Dry 6 months later. Drum intact.
H.O.	8 yrs.	Right	7 yrs.	4	Dry	Dry 6 months later.
E.M W.	52 yrs.	Left	4 yrs.	3	Dry	Did not return.
P.G.	10 yrs.	Left	7 yrs.	5	Dry	Dry 1 month later.
J.W.D.	10 yrs.	Left	1 month	4	Dry	Dry 6 months later.
G.G.	23 yrs.	Right	20 yrs.	28	Dry	Dry 1 month later.
J.L.S.	12 yrs.	Right	3 yrs.	4	Dry	Did not return.
B.S.T.	9 months	Both	4 months	3	Dry	Dry 2 months later.
R.T.A.	11 yrs.	Left	5 yrs.	2	Dry	Dry 2 weeks later.
M.W.S.	27 yrs.	Right	1 yr.	2	Dry	Did not return.
H.C.	11 yrs.	Right	?	1	Dry	Did not return.
P.Y.R.	5 yrs.	Both	6 months	2	Dry	Did not return.
H.L.C.	2 yrs.	Left	1 month	3	Decreased	Dry 13 months later.
F.S.	10 yrs.	Right	2 months	3	Draining	Did not return.

*Cases which had drainage of short duration were acute exacerbations of a chronic otitis media.

Table IV

CASES WHICH HAD MASTOID OPERATIONS.

Case	Age	Ear	Duration of Discharge	Number of Treatments	Result	Recurrences
**H.L.E.	11 yrs.	Left	2 yrs.	40	Draining	Draining.
*J.M.H.	26 yrs.	Right	6 weeks	3	Dry	Dry 6 months later.
**P.B.	12 yrs.	Right	4 yrs.	5	Dry	Did not return.
**K.P.	16 yrs.	Right	8 yrs.	4	Dry	Slight at present.
*M.A.	10 yrs.	Right	?	24	Draining	Draining.
** ***A.J.K.	6 yrs.	Left	5 yrs.	38	Dry	Dry 2 weeks later.
**J.R.	30 yrs.	Right	Intermittent	8	Dry	Dry 4 months later.

*Simple mastoid operation.
**Radical mastoid operation.
***Modified radical operation.

CONCLUSIONS

1. A small number of chronic otorrheas develop fatal complications.
2. The radical mastoid operation is associated with considerable mortality risk, and should be resorted to only when conservative treatment has failed, or when definite indications other than a chronic draining ear are present.
3. The dry treatment of chronic suppurative ears is the best non-operative treatment.
4. Chronic suppurative ears should not be treated by repeated irrigations.
5. "Iodin dusting powder (Sulzberger)" is a valuable adjunct in the treatment of chronic suppurative otitis media.
6. Obtaining a dry ear is no guarantee that recurrence of drainage will not occur.
7. All contributory causes of chronic middle ear suppuration should, if possible, be removed.

REFERENCES

1. Hurd, Lee M. The Use of Surgical Diathermy About the Mouth of the Eustachian Tube for Infections and Catarrh of the Middle Ear. Annals of Otology, Rhinology and Laryngology, 40: 13-18, March, 1931.

2. Babbitt, James A. A Modified Attic Drainage in Chronic Suppurative Otitis Media. Annals of Otology, Rhinology and Laryngology, 40: 348-359, June, 1931.

3. Lederman, M. D. The Laryngoscope, 27: 800-804, November, 1917.

Lederman, M. D. The Non-Surgical Dry Treatment of Chronic Suppurative Otitis Media, The Laryngoscope, 40: 397-417, June, 1930.

DISCUSSION

DR. R. G. REAVES (Knoxville): Mr. Chairman, there is very little to add to or much open to criticise in Dr. Maness' paper. He has given in detail how to prepare a chronic discharging ear for medication, and this is absolutely necessary in carrying out any treatment. If this careful preparation is not made you cannot expect result from boric acid powder, zinc ionization iodin powder, or any other treatment you may prefer.

I have gotten good results with boric acid powder and zinc ionization, and for the past year I have added iodin powder (Sulzberger) to my armamentarium. I have quit the boric acid since using zinc ionization, and I am now about equally divided between iodin powder and zinc ionization, feeling that iodin powder has the advantage in that it is more easily applied. I have had the feeling that I was able to get a better distribution of the zinc solution in the diseased areas, by intermittent suction and pressure, than I could get with the iodin powder. Since reading after Dr. Lederman more carefully I find that my supposition was probably wrong. He states that the free iodin is liberated and finds its way to the utmost parts of the diseased areas. Of course he is careful to try to gently force the powder into the middle ear. Zinc ionization probably has the advantage where the patient lives some distance and can come only about once a week for treatment. I agree with Dr. Maness that we should hesitate to do a radical mastoid operation both to preserve hearing and to avoid fatal complications. After you have carried out your treatment for some time and gotten the middle ear in good condition and there is still some discharge from the antrum it is quite possible that a simple mastoid will give you a dry ear. I had this in one case where I had used zinc ionization.

Iodin powder (Sulzberger) is on the market in two strengths, a 1 per cent and a 2 per cent iodin in boric acid powder. Thus, we are still using the time-honored remedy boric acid in this treatment, but the iodin powder has certain physical and therapeutic properties which have distinct advantages over the boric acid powder. Dr. Lederman warns us of similar iodin powder on the market. He states that he has tried some of them and does not get good results. The powder should be kept in a colored bottle with a tightly-fitted glass stopper.

I wish to commend Dr. Maness for his well written paper. He did not clutter it up with a lot of history and unnecessary details.

PEDIATRIC ORGANIZATION*

ROBERT A. STRONG, M.D.,† New Orleans

IN the assertion that all knowledge of clinical medicine goes back to Hippocrates, John Ruhrah voiced the conclusion which has been reached by every medical historian. Moreover, he informs us that the clinical acumen of the old Greek is only appreciated by one who reads and rereads the Hippocratic canon. I am quite sure that all of us can find experiences analogous to those which we encounter in this age, if we are diligent enough in our search of the writings of antiquity.

Interesting indeed then, is the pediatric knowledge of the ancients, which John Ruhrah and Fielding Garrison have found in the "Ebers Papyrus," in the "Aphorisms" and other writings of Hippocrates, in the "Syrian Book of Medicine," the Hindu books, in the splendid treatise of Soranus of Ephesus, in the Babylonian "Talmud," the "Koran," and in sundry references to the diseases of infant life by other earlier writers. As we read these a feeling of profound respect comes over us for the clinicians who acquired most of their knowledge by the use of their senses.

Only recently did an original copy of the famous *"Treatise of the Rickets: Being a Disease Common to Children,"* which was published by Francis Glisson in 1651, come into my possession. In browsing through its age-stained pages, I was struck with the remarkable clinical description of the disease about which we think we know so much at the present time. In the opening chapter of this famous description of rickets, Glisson indicates the belief that he is describing a disease altogether unknown to the ancients. More than three hundred years after, however, my friend, the late John Foote, whose research into medical history is well known, found incontrovertible evidence that rickets existed among the ancients. In support of his contention he cites the fact that, with the exception of the Spartans, Greeks, and Egyptians, swaddling was a custom among all the peoples of antiquity, adopted for the express purpose of preventing deformities. Proof of this he found in the writings of Soranus of Ephesus in the second century, A.D., who says, "Since swaddling is an important reinforcement and a preventive to deformities, it is best not to free the infant from its protection until the body has become strong enough to remove all appearance of irregularities of form." It continues with the assertion that "the infant's feet become crooked from attempts at walking." In addition, Foote reproduces in his article the religious pictures of the great masters of Continental Europe during the fifteenth century, in which children portrayed showed marked and evident stigmata of rickets. In this connection he remarked: "The evidence of these artists who painted what they saw, seems indisputable."

With the flood of books which followed soon after the introduction of printing, there were four which had to do with diseases of children. Two of these were published separately in books on diseases of children; the third was evidently printed with some other material long since lost; while the fourth was simply part of a long poem dealing with health and related subjects. The first is the work of Bagellardus; the second, Metlinger; the third, Roelans; and the fourth, Louffenburg. The last-named work was written in 1429, but was not printed until nearly the end of the same century. These four works have a peculiar interest, for with their appearance opinions about the diseases of children began to take more definite form, and from this time on the development of pediatrics may be traced very definitely.

These are the books which have been consulted freely by Ruhrah, Garrison, Foote, and other modern pediatric historians. In commenting on these works Ruhrah calls attention to the fact that some of their ideas of disease and therapeutics are quite sound, although there is much that is foolish and stupid. He reminds us of the fact that there is much at the present time which is equally foolish and stupid, and countless current publications will, in the future, be quite foolish to the student of medical history.

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*Read before the Tennessee State Pediatric Association, Memphis, Tennessee, April 11, 1932.

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Thus we have the historical background of the study of pediatrics. The past five decades, however, mark what may be spoken of as a period of the Renaissance of the study of pediatrics. During this period it has rapidly and progressively justified its separation into a distinct branch of medicine. The progress and popularity of the study of pediatrics has been as great, if not greater, than any other special phase of medicine. As evidence of this fact, not more than three of these decades have passed since recognition has been accorded pediatrics by national and sectional associations. Special sections on pediatrics, at first reluctantly established by these associations, have grown with amazing rapidity until they are now recognized as being on a par with any of the other sections. Indeed, the attendance at these special sections on pediatrics has progressively grown, and now equals and occasionally exceeds those of the sections devoted to medicine and surgery. The most recent statistics compiled by the American Medical Association show that 3790 physicians limit their practice, or give special attention to pediatrics, as compared to 3985 in internal medicine.

It has been my privilege to watch the progress which pediatrics has made during the past two decades, and I am convinced that no single factor has been responsible for this progress more than the organization of those who have been interested, into sub-groups of either national or sectional medical organizations, or by the organization of national and sectional societies devoted exclusively to pediatrics. Another outstanding thing with which I have been profoundly impressed, is the loyalty and unity of purpose of the individual members of these special organizations. The interest which has been shown in the special sections has sometimes caused others to speak of us as being clannish. As a result of this spirit of organization, pediatrics, as a special branch of medicine, has made strides which are beginning to cause the envy of other groups in the practice of medicine.

The American Pediatric Society was one of the earliest organizations dedicated to the study and advancement of the subject. Since its creation, organizations have come into existence all over the civilized world. In America several sectional societies have grown beyond the bounds to which they were first intended to be confined. Because of attendance at the meetings of these different sectional and national societies, the contacts which the pediatrists from the north, south, east, and west have made, have resulted in a better understanding which has grown into many warm friendships. Not only has there been an exchange of ideas of a scientific nature, but the intimate associations and spirit of *comaraderie* which pervade pediatric meetings, have been an inspiration and have made many of us feel proud of our membership.

I think if I were asked to summarize the impressions which I have formed as a result of regular attendance at various pediatric meetings, I would say that they have always been conducted with becoming dignity, but for some reason rarely become prosaic. Most of the papers are constructive and instructive, with just enough theory to make them authoritative. Most of them discuss the ill child more than the child's illness. On the other hand, nearly every year some meeting is chosen as the place for the reading of the initial report of the results of what eventually proves to be an epoch-making contribution to the study of pediatrics.

Another thing with which I have been impressed is that the discussions are different. Because of the intimacy and friendship, to which I have referred, most of us have felt it a privilege to say what we mean, and mean what we say. I have known newcomers to some of our sections, who at first did not comprehend the frankness which frequently characterizes the discussion, but in a short time this individual realized from the prevailing amity that any apparent friction in the conflict of opposed opinion was intended only to lead to progress — and nothing else. Moreover, he quickly became aware, from the atmosphere of cordial hospitality, that he was considered as intimate a part of the whole section as if he had been an old member.

These are just a few things which I have observed in the pediatric organization so far, which have contributed to the progress which the study has made in the past three decades.

Much of which I have said would seem to indicate that there is nothing left to be desired in our pediatric organization. Last year in Philadelphia the address of the chairman of the Section on Diseases of Children of the American Medical Association, Dr. Aldrich, of Illinois, was suggested by a statement to the effect that pediatrics, having fulfilled its purpose, might well disappear and donate its contributions to general medicine. He very ably refuted this absurdity, yet there are a number in internal medicine who really believe this. That is what I meant when I said our pediatric organization is being regarded by others with envy. I think any assertion to this effect is about as consistent as the statement which Syme, of Edinburgh, made to the young Lister when he came to him with all the enthusiasm of youth for the purpose of acquiring instruction in surgery. Young Lister was told that it was a pity that he was coming into surgery when there were so few things to be learned about it. Are there any of us who believe that the study of pediatrics offers no further opportunity? Notwithstanding the remarkable progress which has been made in the study of nutrition, and the accessory food factors, is it not possible that much about which we are now talking will be amusing to future medical historians, just as we regard some of the assertions made by Francis Glisson in 1651? Can we not be a stabilizing influence and furnish the leadership necessary to overcome some of the imbecilities which have been broadcast concerning the vitamins? Should we not control and direct the studies of vitamin D substances, such as *calciferol,* which is a crystalline substance said to be 40,000 times more potent than irradiated ergosterol? Is it not in our province to encourage the orderly study of carotene, which may prove to be the vitamin A? Should we not control preventive pediatrics by the strong organization of men who are justified in calling themselves pediatrists? Has not the care of the newly-born been the result of knowledge acquired by pediatrists who finally convinced obstetricians that the child deserved as much consideration as the placenta? Surely the greater part of child guidance can and should be under at least the influence of the pediatrists. Then it is universally recognized that our better and clearer understanding of childhood tuberculosis has been acclaimed one of the brightest beacons in our fight against the White Plague. It is generally conceded at the present time that the early detection of tuberculosis by case findings in early childhood is the most important factor in the prevention of tuberculosis in adult life. These are just a few of the reasons why pediatrics has by no means fulfilled its purpose. It merely emphasizes the importance that organization is necessary now as it never was before. It illustrates that at too many points our legitimate field has been invaded, and that if we are not ready to meet this invasion by proper organization, the situation will become chaotic.

So far the organization of pediatrics has been satisfactory, as I have previously indicated. The Section on Diseases of Children of the American Medical Association has, and will continue to furnish satisfactory leadership as the national organization of regular medicine. It is a part of the Association of which every reputable practitioner of medicine must be a member. It will endure and continue to have our loyal support. Special problems in pediatrics, however, have arisen, and these will have to be met by special organization. I have just made reference to many of these problems. These and others have been emphasized in the recent White House Conference on Child Health and Protection. The voluminous reports and recommendations which have come from this meeting indicate very plainly that we are in possession of a large amount of worth-while information that we are not utilizing to the fullest advantage in the practice of pediatrics. On the other hand, this Conference showed how pediatrics can be invaded by a vast number of individuals who have no qualifications to assist us in the successful solution of many of the problems which it has revealed.

During the period which I have chosen to call the Renaissance of Pediatrics, our progress has been encouragingly satisfactory, but I think that we have reached a point where if the best traditions, dignity and efficiency of pediatrics, are to continue, organized regulation is absolutely necessary. We must establish and maintain the highest possible standards of pediatric education in our medical schools and hospitals; we must regulate pediatric practice and research; we must see that those who undertake the practice of pediatrics possess the necessary qualifications. These are some of the reasons why it was necessary to organize the American Academy of Pediatrics. This organization, conceived in Portland, Oregon, in 1929, born in Detroit in 1930, celebrated its first birthday in Atlantic City in 1931, and will celebrate its second birthday in New Orleans next month. Already its existence has been more than justified, and it will meet successfully many of the problems to which reference has been made.

Formerly the need for municipal and state pediatric societies was not felt in most parts of the country, but problems in pediatrics, which are of a distinctly local nature, have arisen which make such organizations desirable. Moreover, they are necessary as local points of contact for the national organizations. In states where they have been organized, experience has shown full justification for their existence.

There is one section of pediatrics for which most of us here hold a very intimate feeling—it is the Section of Pediatrics of the Southern Medical Association. Only a few years have elapsed since a small group of pediatrists from the south requested the Council of this southern association to form a section on pediatrics. They were told that there were not enough men in the south interested in this subject to justify creating such a section. After some persuasion, this section was organized. Its growth has been second only to the remarkable growth of the Southern Association. The State of Tennessee has furnished three chairmen of this Section, and no small amount of the credit for its success is due to the pediatrists of the State of Tennessee. I am sure that we are all convinced that the organization of this particular Section is largely responsible for the present progressive status of the practice of pediatrics in the Southland. Five years ago it was my privilege to be chairman of this Section when it met in this city, and I have always regarded it as a distinct honor.

When I learned that the Tennessee State Pediatric Association had been created, I was particularly gratified, and I want you to know how deeply I appreciate your invitation to appear on the program of your first meeting. I bring to you the cordial greetings and best wishes for success from the Louisiana State Pediatric Society.

MIDDLE GROUND*

JOHN S. FREEMAN, M.D., Springfield

I WOULD be unkind and ungrateful indeed if I did not extend to you my thanks and appreciation for the honor you have conferred upon me in selecting me as your President. The duties connected with this honor, while somewhat exacting, have been made pleasant by the fact that I am endeavoring to render a service to the profession whose custom has made it necessary that I deliver this address.

There have been, seemingly, two extremes in the medical profession—those who attempt to over-do, and those who under-do, and for this reason I have selected the subject of Middle Ground in Medicine.

The three outstanding individuals in the practice of medicine are—the specialist, the doctor and the patient.

Benjamin Franklin said, "The greatest cunning is to have none at all," and this fits well in this discussion.

Perhaps a definition of Specialist and general practitioner would better be given here to avoid a misunderstanding later on. I consider a specialist to mean a graduate of a reputable medicine school, a qualified, licensed doctor, who has perhaps before, but certainly after graduating, further intensively and extensively pursued the study of a certain branch of medicine or surgery, and who limits his practice to that chosen branch, and who refuses or refers to another, any and all practice not properly belonging within his limited line.

I use the term specialist to mean those who practice surgery, neurology, radiography, bacteriology, opthalmology and subjects of that type. Affectations of the heart, lungs, and abdominal organs are to my mind, in the province of the general practitioner, for he is much better qualified to diagnose and treat those organs than a man who confines his study to any one of them.

I would define the doctor or general practitioner as a graduate of a reputable medical school, who has a general knowledge of medicine and who restricts his work to the practice of medicine and refers such cases as require skill to others who have equipped themselves in that work. One of the most important things for a doctor to know is when he doesn't know; and when he decides what system is at fault and that he can't successfully handle it, he should be able to admit that help is to be gained by calling in a specialist in that particular line.

To this strict interpretation some may object, and it is probable that many who consider themselves specialists and are so accepted by the doctors and the laity, would fail by a large margin to fulfill its requirements. But I contend that any interpretation less strict would be unjust to the general practitioner, and that its honest fulfillment is necessary to proper professional conduct, to the rights of both specialist and practitioner, and to their attitude and service to the public.

This, I believe, would be more satisfactory if the specialist engaged only in consultation work and relied solely upon his brother physicians for his practice. If this were the case, and a specialist knew that his income depended upon his skill and the esteem of his colleagues, and to a less degree upon the impression he makes on the public, there would be a greater incentive towards a more thorough preparation and constant effort.

I only wish to present the duties of each as I see them, and the relations of one to the other. Our mutual objective should be the patient's health, which can be reached and realized more intelligently, more quickly and more surely through a close co-operation, each courteously remembering the fact of their inter-dependence and each rendering "unto Cæsar the things that are Cæsar's," and I may as well continue, "unto God the things that are God's."

The patient and the public are quite often erroneously inclined to think that the specialist is the last word in medicine, but I am inclined to believe from my experience as a general practitioner and from my experience with specialists, that it is of more importance for the general practitioner to have a greater knowledge of the different organs of the body and their diseases, than the specialist. It is important for the physician to study the history of the patient and his family history; to know him in health so that he may know how far he has deviated from his normal in sickness, in order that he may determine just to what specialist to refer him, and that he may be able to give the specialist a more accurate history of the patient's illness. When he has done this he has paved the way for the specialist's success.

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*President's address read before the Middle Tennessee Medical Association, Sparta, May 5, 1932.

The general practitioner often fails to perform his duty to the patient as he should. It is his duty, and it should be, when he has a patient that he doesn't thoroughly understand, to determine to what specialist to refer him, and not only refer him, but impress upon him why he does so, and urge upon him the importance of this, and if possible accompany him to see the specialist; but if this is not possible, then he should write the specialist a history of his findings and why he is sending him, and in turn the specialist should communicate his findings to the practitioner, that they together may be able to work out the best treatment for the patient.

It is just as much our duty to be teachers as it is to be doctors and specialists. Failure along this line causes the average patient to become frightened at the word specialist, which is detrimental to the patient and the practitioner as well.

It is of great importance that the practitioner work out the patient's case well, for the reason that the average patient has limited finances and can't be referred from one specialist to another, as I have known in instances where the patient was referred to a specialist without the case being worked out and another specialist called in. When he receives his bills from the different ones, he becomes skeptical and concludes that the physician and the specialists are in a combine to fleece him of his money.

The specialists in some cases, by extension put themselves in the role of general practitioners. It so happens that local conditions are secondary to some general condition: for example we know that tuberculosis of the larynx is practically always secondary to tuberculosis of the lungs, and that the improvement of the larynx depends upon the improvement of the lungs and the patient's general health, and when the specialist attempts to treat the patient's general condition he loses his specialism and becomes a general practitioner.

The public is to blame for much that it suffers at the hands of the profession. It values the services of the doctor too lightly and while they would never dream of trying to regulate their own watches or those of their neighbors, they practically never consult a physician until their own idea of treatment has been tried and failed. If an ordinary man bought a piece of property, he would not risk a faulty deed by dealing with it himself, or asking any one but a lawyer to do it for him, yet the same man will risk the lease on his life by allowing his non-medical friends to diagnose and treat his complaint, even after receiving the opinion of a skilled doctor.

Many a physician has been taught how to deal most completely with his patients, and of the lofty ethics of the profession as built throughout the ages, and yet has never been taught or at least never has learned, that the public has practically no ethics toward the physician.

Again the ignorance of the public in matters relative to health, is very great, and the doctor is expected to make a diagnosis and to treat the case in the "penny in the slot" fashion. The public cannot realize that such a small thing as a cough may be due to many causes and that the early and correct recognition of the cough may call for the help of a general practitioner, and that he may require one or more special reports.

If one should ask in a meeting of doctors, "What is wrong with the Medical Profession?" the emphatic and immediate reply would be, "Nothing." If the questioner were persistent and should ask, "Why then do so many cults and irregular practitioners flourish?" what then would be the answer?

Periodic physical examinations are recommended for the individual; the value of recognizing abnormal conditions in their very incipiency is stressed; special examinations of particular parts of one's anatomy by one who is competent and an expert in the field is urged.

There is a trite saying "What is sauce for the Goose, is sauce for the Gander." Why not an examination of the medical profession, and if necessary an operation thereon?

The medical profession is old, very old, and has a most honorable and brilliant history, but like an old and honorable individual it may need a little alteration in its mode of living and functioning. But if a physical examination to determine its needs should be made, who is better qualified to make the examination—the flagrant and ever ready magazine critic, the social uplifter, the notoriety seeker, or the hard-headed, studious doctor himself?

The modern idea has no doubt worked more hardships to the general practitioner and in all probability will continue to, unless they wake up and find their station in the profession, and quit being swayed by the ultra-scientist, free clinics and hospitals. Perhaps nothing has been done more to upset the practitioner's professional equilibrium than the charity hospitals and free clinics. With the great increase in the number of specialists there seems to be growing among general practitioners a too firm dependence upon their advice with a consequent disparagement of their own powers and ability. No one has a greater respect and admiration for the work and accomplishments of the specialist in the various branches of medicine than I. To a large extent they have been responsible for the great growth of scientific knowledge along particular lines, but I confess to a sense of resentment and a strong conviction that it is not for the public welfare that the field of the general physician becomes year after year, more restricted to an absolutely unjustifiable degree, and unless they better equip themselves and realize their field more, this cannot be denied.

The charity hospital clinics have assumed an important role. They accept patients from anywhere on their own statements and in some instances more readily than if referred to them by a general physician. Then after they have been released by the Hospital, or are no longer able to pay their board, some physician will receive a letter from the hospital or some specialist, therein stated that he is the patient's preference, and stating that the patient will require some follow-up work and asking if he will not carry out the treatment that they have started, and as sad as it seems, there are some physicians who will do it.

The field of periodic health examination is the ideal work of the general practitioner, and perhaps this is one of the best phases of medicine that has been instituted, but the specialists and clinics and health units have destroyed its middle ground. The patient is carried through those large mills from one specialist to another and great piles of data made out on him, and as much time spent in the locating of a mole on his face, whether or not it would interfere with his equilibrium, as there is spent in finding more hidden, serious pathology, to the extent that the average man or woman has neither time nor money to fool with it. But why not the general physician take up this work and educate his following, showing them the importance of looking them over in a general way once a year and keeping a general record of their findings? There is no general standard. What is normal for one patient is not normal for another, but if the physician has a general record he can very soon refer to it and know just how far he has deviated from his normal. Each year I have more and more people coming to me for a careful examination, and what they want is to be assured that so far there has been no break in their machinery, and if there has been, they want to be advised so that they can take the necessary steps to have it repaired.

If a patient is suffering pain he wants something to relieve that pain, but more than anything else he wants encouragement. I think more patients come to us on account of being discouraged than for any one other reason. And I do believe that we as physicians, should give each patient a careful examination, listen to his story, find out as much as possible what his trouble is, and direct and advise him, but above everything else encourage him. If we do this, and keep ever before us the patient, study him carefully, think of his needs, his troubles, his worries, take a sympathetic interest in him, we will have nothing to fear from medical legislation or state medicine.

Referring to the duties of the general practitioner, when he has a case that he cannot successfully treat, that he should refer it or call in some one who has special skill in that particular line to treat it, or assist in the treatment, it is not intended to mean that he should continue to refer such cases to some one else. That is where the school of experience comes in. If through the association of and by assisting the one skilled in the particular line, he learns how it is done, it becomes his knowledge and afterwards when he has a similar case and he feels that he can successfully treat it himself, he should go ahead and do it.

Much has been said in the last few years about the passing of the old family doctor, and his being supplanted by the specialist. This may be true. If that old type of doctor who dressed in a frock coat and wore a high hat and long beard and spoke a language all his own, and who was consulted on everything from an ingrowing toenail to a divorce suit has gone, he is or will be, supplanted by the physician or general practitioner who will be alert to the general conditions of the patient and to recognized medicine, and will serve the great middle ground between that old character and the ultra-scientific specialist of today. To be this he must be scientific, but not ultra-scientific. I would not have you think that I have a lack of appreciation of the values of the scientific advances in medicine. I believe that few men have a greater appreciation of these advances than I. I have had the privilege of watching their growth for more than twenty-five years. But in this age when some men are fixing their eyes on the material, mechanical and scientific, let us not lose sight and touch with the spiritual and not be swept with the tide to the extent of degeneration into a purely mechanical science and lose the beautiful and supreme truths that have always distinguished a profession from a trade.

It is not the purpose of this essay to speak disparagingly of scientific training. Although educated and trained in the old school of practical clinical medicine, I am by no means blinded to the great value of modern scientific methods in the study and treatment of diseases, but I am firmly convinced that the pendulum is swinging too far to the scientific side, to the neglect of the practical, clinical side. No matter what the laboratory says, if it will not correlate with the history of the bedside findings, it is better to take the clinical, rather than the laboratory. I do not say this in criticism of the laboratory; on the contrary I would not know how to get along without it, but my purpose is to discourage the tendency of stressing the importance of the laboratory to the neglect of the clinical side.

I would not have you think that I belittled any of the branches of the profession, but offer a plea for a closer co-operation of all. In this day and age it is more than ever a survival of the fittest. In bygone days people were born more or less into whatever position they occupied; today more of us start from a scratch and by diligence, luck or intelligence, we carve a niche in the world and a name for ourselves. Our long ago ancestors were content to be born a pesant or a freeman and did not try ve: hard to be anything else. Today almost from birth it is dinned into us that we must succeed over our forefathers and push ourselves to the top. And in doing so we must all do our best, for after all, life is a sheet of paper white, whereupon all of us may write, and then it comes night.

ALLERGY IN CHILDREN: SOME POINTS IN DIAGNOSIS*

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FEW of us realize the importance that allergic conditions play in the practice of medicine, and especially of pediatrics. It has been variously estimated that from eight (1) to ten (2) per cent of the normal population is suffering or has suffered from some form of allergy, and this includes asthma, perennial and seasonal hay fever, eczema, urticaria, angioneurotic edema, certain acute gastrointestinal disturbances, some cases of conjunctivitis, migraine and erythema multiforme. Of particular importance to us is the fact that the most of these conditions have their onset or are seen mostly in childhood, as for example; fifty to sixty per cent of all asthma starts before ten years of age (1).

My .purpose in this paper is to take up in a general discussion some of the more important and a few of the unusual manifestations of allergy and points in their diagnoses.

Before starting, it will be well to define the term allergy as it is used here. It is in general a specific hypersensitiveness or an inherited tendency toward this hypersensitiveness manifested clinically as asthma, hay fever, etc. This specific hypersensitiveness or allregic state may or may not be inherited but the more complete the family history the more likely the child is to inherit the tendency and the earlier it will be manifested. Spain and Cook (3) have estimated with a bilateral family history that seventy-one per cent of the children will develop allergic conditions, and with a unilateral family history fifty-six per cent Bray (4) states that twice as many of the offspring are likely to be affected when the female transmits, and the transmission is twice as often through the female as the male. Again Bray says one is not justified in explaining the transmission by Mendelian Laws as two modes seems to be involved, the first; Germinal (through germ plasm) and second; Placental or Serum, not truly hereditary but an active or passive fetal sensitization in utero. The second part has been very definitely shown in experimental animals by Ratner (5) and there are numerous instances of apparent clinical manifestations. Babies may react allergically on first contact with some food and on questioning it is found that the mother ate an overabundance of this food during pregnancy. This fact should be brought to the attention of all obstetricians so that if they are prescribing a restricted diet they should first find out if the mother has an allergic history.

In diagnosing any type of allergy the family history is important. Especially is this true in children. When a child is first seen for a condition suspected of being allergic, it is well and necessary to take a very careful history, remembering to go back to the grandparents, because a mother or father may transmit the disease and yet show no evidence of it themselves. In asking these questions do not make them too leading but try to elicit by careful and roundabout questions any allergic manifestations, for the ordinary person is likely to call any type of skin rash eczema or nettle-rash.

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*Read before the Tennessee Pediatric Society at Tennessee State Medical Association, Memphis, Monday, April 11, 1932.

The past history of the child will nearly always elicit some valuable information. Inquiry should be made as to the first ingestion of certain foods, also place of residence and changes, if any, and contact with animals and pets. All of us have had cases where the mother dates the onset of the eczema very definitely from the first time she gave cow's milk or orange juice. Of course if the child is breast fed and not getting anything else we may have to wean it temporarily or even permanently in order to clear up the eczema.

It has always seemed rather strange to me that infants are frequently able to tell which foods will or will not agree with them as shown by their refusing certain foods. If the mother forces them to take these foods, the eczema breaks out anew or diarrhea ensues. This will also happen in older children and sometimes instead of disliking a food they may crave it yet know it is going to cause trouble. If the patient is tested for sensitivity to this food during or just after one of these upsets the skin reaction is very likely to be negative, for there seems to develop a period of temporary desensitization with relief from symptoms. In some cases all skin tests will be negative yet there will be definite proven clinical sensitivity. We treat these cases too often with an, "Oh, it is just something she has eaten," give a laxative and withhold food for twelve or forty-eight hours and call it a cure, only to have the patient come back with the same complaint a week or month later.

More frequently than not there is a concomitant skin rash which usually takes the form of an urticaria with swelling of the lips or extremities, or the rash may be papular or eczematous. Occasionally the swelling may spread to the tongue and later the pharynx and so become dangerous. In the later case adrenalin must be given at once. Ordinarily bathing with soda or a very weak phenol solution or calomine lotion will relieve the itching. Soda by mouth will also help to give temporary relief.

Still another point regarding these urticarias is that they may not be due to foods, as one of the more important causes is the epidermals, such as feathers, wool, horse dander, etc. This can frequently be suspected from the history; witness the case of a boy who had urticaria two to three hours after retiring and was found sensitive to feathers and was relieved with the removal of the pillows.

The diarrhea may be very severe, as for example: an infant under one year had a severe and bloody diarrhea and was treated as an ordinary dysentary (even to blood transfusion, although the cultures were negative) without improvement, yet the diarrhea cleared up entirely in forty-eight hours when egg was removed from the diet and later showed a similar reaction when egg was again given.

There are numerous cases of so-called colic in the small baby that can be definitely traced to milk, orange juice or to some food. This colic in the older child may take the form of intestinal cramps, even simulating intestinal obstruction, and can frequently be relieved by large doses of atropine. Of course in all these cases the clinical evidence should be corroborated by skin tests and, if possible, by re-feeding or re-exposing the patient, thus producing the symptoms again. It must be remembered that in some cases the patient will not react to a standard solution of the offending protein but will react to an extract of his own pillow, house dust, dog hair, etc.

Probably the most frequent offenders in the small infant (especially in eczemas and acute gastro intestinal disturbances) are the very common foods. For patients usually become sensitive to those things to which they are most frequently exposed and these proteins may be foods, inhalants (epidermals or pollens), bacteria or sera, and may be ingested, inhaled, injected or come in contact with the skin. This is almost certainly true with ante-partum sensitization as well as later, but the ante-partum sensitization should be elicited or at least suspected from the carefully taken history The ante-partum sensitization may manifest itself so early that the child will have a bloody diarrhea within the first week of life. This was true in one male infant and it seemed so incredible that he was taken off of his mother's milk, put on evaporated milk for four days and the diarrhea cleared up. He was then put back to the breast and the bloody diarrhea re-appeared. Still unwilling to be convinced the procedure was repeated with the same results and each time there was a concomitant skin rash. This child later on developed a fairly severe eczema due partly to cow's milk and is still under observation. Incidentally this patient is the only child I have ever seen that has shown a fairly definite reaction to cod-liver oil.

Now it may seem strange to blame nervousness and a so-called spoiled disposition on sensitivity, but occasionally this may be true. The habit of dropping things, for instance, may be an early symptom of chorea; so nervousness may be an early symptom of asthma. In one particular case a child had a bilateral family history of proven allergy and was taken to two doctors for restlessness and nervousness at night, inability to sleep and at times complaining of not being able to breathe well as the cause of awakening. No signs of asthma were found and careful examinations were negative but the complaints persisted. On the chance that the allergy was influencing (if not causing the trouble) she was tested and found sensitive to feathers and wool. On removing these she was entirely relieved, but has had some definite signs of asthma with a recent attack of bronchitis and is to be tested further.

In addition to the above points in the history, questions should be asked about relationship of attacks to meals, to night and day and to season, for frequently in asthma there may be in the long standing cases no seasonal variation for secondary factors have entered in to play too important a part. Yet if the first few attacks occurred during the hay fever season, pollens will nearly always be a factor, and if specific sensitization is proved, pre-season desensitization will help.

The time element may also be important in helping to trace the offender to the parents' occupation. This is well illustrated in the case of a female infant of ten months who had eczema. She was doing very nicely after having been found sensitive to orange and wheat and having these removed from her diet. But she continued to break out every week-end and clear up by the next Thursday or Friday. It was found that the father, who worked in a wholesale grocery, came in contact with the child only on Saturday afternoons and Sundays, and it was thought that since he was not in the habit of changing his clothes that he might be bringing home enough flour in his clothes and hair to cause trouble. A weekly shampoo and a complete change of clothes did the trick.

So from the few cases cited one can readily see the great importance of a careful family and past history.

Then there must be the usual careful general physician and laboratory examinations. In the asthmatics this should include a tuberculin, X-ray and an examination by a competent ear, eye, nose, and throat specialist. Foci, whether in the teeth, tonsils, or sinuses should be removed.

After all the information available is obtained, it is time enough to proceed with the skin tests. The type of skin tests used will depend upon the individual doctor's preference, therefore this will not be discussed here. On the whole the scratch is simpler, gives fewer positives yet fewer false positives. The intradermals test in the hands of one thoroughly familiar with it is probably more accurate but also more dangerous and will give false positive reactions. In children, if the tediousness and painfulness is to be considered the scratch test will be used. The patch and passive transfer tests are not applicable to general work.

BIBLIOGRAPHY

1. Balyeat, Roy M.: Allergic Diseases and their Diagnosis (Text).

2. Cooke, Robt. A. and VanderVeer, Albert, Jr.: Human Sensitization: J. Immunology, Vol. I, 1916, p. 201.

3. Spain, W. Cook, and Cooke, Robt.: J. Immunology, Vol. IX, p. 521, 1924.

4. Bray, Geo. W.: J. Allergy, Vol. II, No. 4, May, 1931, p. 205.

5. Ratner, Bret.: Am. J. Dis. Ch., Aug. 1928, Vol. XXXVI, pp. 277-288.

General References: Clinical Allergy (Text) Francis Rackemaun.

Allergic Diseases—Roy M. Balyeat.

Bronchial Asthma—Harry L. Alexander.

Food Allergy—Albert H. Rowe.

Allergy (Asthma, Hay Fever, Urticaria, and Allied Manifestations of Reaction) Wm. W. Duke.

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EDITORIAL

Dr. William David Haggard

The medical profession of Tennessee may justly take pride in the fact that one of its members has achieved a series of distinctions and honors seldom accorded one man in medicine.

Dr. Haggard has served organized medicine as a member of his local society. He has served as president of his local society. He has served as president of his state society. He has served as president of the American Medical Association.

He was secretary of the Southern Surgical Association for a number of years and was made president in 1917. In fact, it was largely through his efforts that this important surgical organization became such an outstanding success. Dr. Haggard was president of the Inter-State Post Graduate Medical Assembly of North America in 1929.

He is a member of the Clinical Surgical, the American Surgical and of the Societe Internationale de Chirurgie.

Recently he was elected to the presidency of the American College of Surgeons. This is no mean record. Only one other man in America has been president of the American Medical Association, the Inter-State Post Graduate Assembly and the American College of Surgeons.

These connections and these offices have required time, energy, effort, and doubtless much financial sacrifice. Notwithstanding this he has found the time from a very busy and active practice to serve as president of a city civic club. He has found time to do things which promote civic betterment.

We take pleasure in paying tribute to the qualities which achieved such distinctions.

Dr. I. A. McSwain

The death of Dr. McSwain at his home in Paris, Tennessee, on October 30, removed from organized medicine one of its distinguished and beautiful characters.

Dr. McSwain was possessed of a high order of intellect, a balanced judgment, a keen sense of right which means a high sense of ethics, a love for his fellow man and for organized medicine.

These qualities were used entirely in the service of his fellow man both directly at the bedside and indirectly by advancing organized medicine. He has left to us a noble example and a memory we all will treasure.

A Report of the Committee on the Cost of Medical Care

The Committee on the Cost of Medical Care has released another report for publication. On another page of this issue will be found the report as forwarded to the Journal office, together with observations by Dr. George P. Muller.

Readers are requested to turn and read the report before reading the remainder of this editorial.

It is very necessary that the profession keep itself informed as to the developments that are taking place in connection with these investigations. This report, more clearly than some of the others, portrays the actual thinking and the actual purpose of this committee.

As will be noted, the report deals with the cost of the medical care of soldiers (officers and enlisted men) and such of their families as live in the camp. (See paragraphs 7 and 8.) The findings of the committee are as follows: The per capita cost is $40.90 per year as compared with a per capita cost of $67.38 among civilians with an income of less than $1,200 per year. The cost of drugs (see paragraph 14) is 72 cents per capita compared with a cost of $4.86 per capita, etc.

After lauding the service rendered, the report both in the heading and in the conclusions (see paragraph 20) holds this up as a pattern for civilian communities.

At first glance these statements and figures may be alluring. An analysis of the facts show them to be deceptive and the conclusions to be nothing short of communism.

First, let's compare this group of people with a civilian group—say, a county with a population of eight thousand. There are many counties in our southern states with such a population. A majority of the population dealt with in the report are military men who were physically fit when taken into the army. The daily routine of these men is designed to promote physical fitness. They are not engaged in a hazardous occupation in peace time. Their daily habits are regulated and supervised. The bugler puts them to bed with taps and wakes them up with reveille. Their meals are nutritious, well prepared food, eaten with definite regularity. Their clothing is issued and is appropriate to the climate and season. Their quarters are sanitary, or the guilty party is court martialed for his failure to keep them so. They are immunized against typhoid and small pox, if necessary, and the only cost involved is that of ordering the men to appear at a certain spot on a certain day, plus the cost of the vaccine bought at wholesale, and the salary of some one to administer the vaccine.

When a medical officer is called to see a sick person in quarters the medical officer has no transportation costs and a simple order issued by him to put the patient in the hospital is all that is necessary to accomplish the hospitalization of that patient. The officers have no office expense, no cost of equipment, and no taxes, income tax or otherwise. Relatively few nurses are on duty. Hospital orderlies do the routine work of waiting on patients.

It is necessary to bear all these circumstances and conditions in mind if one is to make a fair comparison of an ordinary civilian community with a military or communistic community from the standpoint of the cost of medical service.

In addition to this it is necessary to read paragraph 4 of Dr. Muller's report to find that patients requiring *special attention* are not taken care of in that hospital. They are sent to Walter Reed or some other general hospital. In other words, the very patients whose care would be most expensive are removed from this group. The body of the report fails to mention any account taken of the cost of constructing the buildings and the cost of operating the army medical school to prepare the doctors, and fails to mention the per diem cost of operating the Walter Reed Hospital, which we are informed is well above $10.00 per day.

In an average civilian community of eight thousand population there are homes some of which are in a small town. Others are scattered over a large area. In some of these areas some of the roads are good and some are poor. The people are segregated into family groups with an average of about five persons to a family. Each family constitutes one unit of the organized community life. There may or may not be a hospital in the community. Some of these people are well-to-do and some of them are poverty stricken always, in good times and in bad times. These people think of their homes as their castles. They are at liberty to work and play as they please. They have such luxuries as they can afford. They belong to a church of their selection if they want to belong to one at all. They go to bed when they want to and get up when they want to. They eat such food as they prefer and can afford, prepared as they want it prepared. They wear such clothes as they choose to wear and can afford. They are not subject to the orders of anybody. If sick they choose their doctor. The doctor is at liberty to accept the call or decline it as he prefers.

In all ages people have sought the happiness of such a life. Certainly living in such fashion is more expensive than if the entire number lived in one large tenement dwelling or dormitory. Their clothing is more expensive than if all of them wore one certain weight of one certain pattern for each season. Their food is more expensive than if it were prepared in one or a half dozen kitchens. Certainly it is more expensive to render the medical service. To achieve all the economies possible in administering the medical service the entire life of the community must be organized in a military way. The entire population group would eat the food prescribed by the commanding officer of the community. They would wear the clothing prescribed by the commanding officer. They would eat the food prescribed by the commanding officer of the community. They would go to bed as ordered. They would get up when and as ordered. They would take their daily routine of physical exercise calculated to build them up physically. They would obtain permission to fish and swim. They would go to work when ordered and do such work as is ordered. When some member of the family is ill the medical department would be notified and some one in authority would direct some member of the medical staff to attend the patient. He would attend the patient and issue such orders as seem to him proper. He might order the patient to such a hospital as he might designate and to the particular ward he would designate. He would order an operation performed or not as he deems proper. The members of the family of the patient would have no voice in any of these decisions.

It is not fair to speak of the economies that might be achieved under a communal or military organization where the liberty of individual decision is lost and the power of command is vested in some one, without making mention of all the liberties that are lost when such a communal plan is adopted.

The only possible inference to be drawn from the heading and conclusions of the report is that the Committee on the Cost of Medical Care recommends such an organization for civilian communities.

This report brings forcefully to the front the fact that there are people in our midst holding high academic degrees and responsible positions, who would *sell* our freedom in exchange for a reduction in the cost of medical care of thirty-three and one-third per cent. All people with such minds lose sight of several fundamental facts. They lose sight of the fact that the people who brought civilization to this continent at great sacrifice of life and fortune were seeking *liberty*. That most of our wars have been fought in the name of liberty. It is proposed in this report that all liberty be surrendered in order to accomplish some little reduction in the cost of medical care.

The organization proposed is close akin to the organization in effect in Russia today, from what we understand of Russia.

The Committee might have ascertained the cost of food, clothing and shelter in this military group but they did not. In our opinion, the cost of these three necessities would have been far below their cost among civilian groups. In fact, the reduction in their cost would approach seventy per cent.

Those who have had any doubts as to the *communistic* leaning of the *directors of this committee* on the costs of medical care need have no further doubt now.

We have been taught to pay homage to the men who brought liberty to this land. We have been taught to guard it with our lives. Many of us have displayed a willingness to sacrifice life itself, if necessary, to preserve liberty. In our opinion, there is little difference between losing our liberty to a foreign foe and losing it to the *whims of visionaries who live amongst us.* These visionaries seem never to have appreciated what the word "liberty" means.

We might end the argument by agreeing that one church in a community under the direction of the state might be less expensive than several different denominations and churches, — that elections are expensive—that democracy is expensive, that a monarchal government should be less expensive than a democracy—that one commissary in each community operated by the state could supply goods (boots and shoes and groceries) at less cost than they are sold at today. But who wants to be robbed of his right to choose his religion, his doctor, his hospital, his right to vote, his right to liberty just because it is cheaper?

Most of us prefer liberty to chains, even if liberty is more expensive.

OBSERVATIONS ON SURGICAL SERVICE AT FORT BENNING

By GEORGE P. MULLER, M.D.
(Professor of Clinical Surgery, University of Pennsylvania, Philadelphia.)

The surgical service at Fort Benning is organized on the usual military plan whereby the chief of the service has complete control of the entire surgical division except in so far as he is under the direction of the commanding officer of the hospital. He has five assistants, one for the urology service, one for obstetrics and diseases of women, one for nose and throat, a radiologist, and one, the senior in rank among the assistants, who does much of the general surgery and acts as a right-hand man for the chief. In so far as I could determine, these men work in perfect harmony and speak enthusiastically of each other's work and ability.

Unless they are attending to unavoidable military affairs, the staff is in attendance from 8 A.M. to 4 P.M. on weekdays and are on call at night. At other times the service is in charge of a (rotating) officer-of-the-day who lives in the hospital while on duty. There are no internes, as in civil hospitals. Hence, the ward surgeons do all of the dressings, write up the records, and make the rounds twice daily.

These men have been graduated from first-class medical schools, have had interne training, have gone through the Army Medical School, and then, step by step, have *attained definite duties dependent largely upon their rank.* THERE ARE, OF COURSE, BUT FEW OUTSTANDING SURGEONS IN THE ARMY. It therefore stands to reason that only a few will be trained to perfection, and the remainder, who are of average ability, attain their professional salvation by having considerable leisure to think and read and plan for their patients. Promotion occurs by the simple process of moving up in rank and not by competitive advancement from hard, successful work.

The facilities for work at Fort Benning and the equipment generally are *excellent, although essentially simple. Many of the more elaborate pieces of apparatus seen in civilian hospitals were not noted*—but it must be remembered that the hospital is a "station hospital" and *patients requiring special treatment are sent to "general hospitals"—for instance, to Walter Reed—for more expert attention.* This gives rise to the thought that the system might well be applied to cities provided with many, variously equipped hospitals. In civilian life local pride often condemns the patient to inadequate medical service when he should be transferred to a large, well-equipped institution. For example, I doubt that the surgeons at Fort Benning would try to collapse a chest in a case of chronic empyema, or to perform a partial gastrectomy for cancer, or to attempt a brain operation except for trauma. *The smaller Army hospitals can transfer the soldier, without cost to him, to such places as have available experts in special fields.*

The patients at Fort Benning are receiving excellent surgical care. Every dressing was in perfect order and, at the time of the visit, there was no post-operative infection present in any wound. As each officer on the wards was not over-burdened with work, he could give perfect individual attention to the patients. Within certain limits, the quality of the work done was high. The records were as good as those seen in the average small civilian hospitals (the anamnesis was better) except that the findings at the operation were not descriptive. The nursing notes were excellent.

The venereal division of the urological service was managed perfectly and large numbers of men were rapidly, thoroughly, and scientifically treated. A follow-up system, otherwise than in the venereal group, was conspicuous by its absence, but it must be remembered that in the Army the patient is given the maximum hospital care before discharge and when discharge is believed fit for the duties of the soldier, unless sent on leave.

The advantages of the plan at Fort Benning are (1) the organization provides that a patient may be sent promptly to the hospital to be examined and treated by an expert surgeon; (2) the surgical staff are exclusively interested in the small group of patients under their individual care and there is no delay in the handling of complications or emergencies; and (3) the close association of the entire medical personnel makes for ease and frequency of informal consultation.

The disadvantages of the scheme are inherent in the necessary Army plan of preparing for war, and the development of a system to provide care for the sick and wounded which will work reasonably well despite frequent shifting of personnel. Members of the staff are moved about every three years and have no time to develop habits of work or to perfect themselves in special fields. The experienced surgeons become administrative officers when they reach a certain rank.

The above criticism is only meant to apply to the applicability of this sort of hospital to a community of similar size.

ORGANIZED ARMY MEDICAL SERVICE SETS EXAMPLE FOR CIVILIAN WORLD, REPORT DISCLOSES

Washington, D. C.—A striking illustration of how the cost of medical care can be drastically reduced by co-ordinating and integrating related branches of medical care is revealed in a study of the organized medical service which provides care for the army and civilian population at Fort Benning, Georgia, made public recently by the Committee on the Costs of Medical Care in Washington, D. C.

The Fort Benning medical service is of significance to the general population of the country, it is pointed out, because it operates in a manner applicable to civilian groups elsewhere.

The cost of a hospitalized illness, which has always been a large item in the expense of sickness, has been reduced at Fort Benning to one-tenth of the amount families in the highest income groups throughout the country usually expend, the report states, and it is forty per cent below what families in the lowest income groups usually are charged for such care.

This report of the "Organized Medical Service at Fort Benning, Georgia," by I. S. Falk, Ph.D., published by the University of Chicago Press, is the twenty-first study completed by the Committee on the Costs of Medical Care, which on November 29 of this year will issue its Final Report with recommendations based on its five-year study of the problem of "providing adequate, scientific medical care to all the people, rich and poor, at a cost which can be reasonably met by them."

Fort Benning is an Army post where infantry officers receive post-graduate training in strategy and tactics. Nearly 8,000 persons—officers and enlisted men, their dependents and servants—were eligible to receive care under the post's organized medical service in 1930, the year studied.

The population as described by the author of the report may be classified roughly into two categories:

1. The Family Group — composed of the military heads of families and their dependents and servants. This group comprised nearly half (46 per cent) of the total population eligible to receive medical care, and, for the most part, was not unlike any normal civilian population.
2. The Army Personnel—composed of officers and enlisted men who live in bachelor quarters or barracks under a strictly military regime. This group comprised 54 per cent of the post's total population.

Complete Medical Care Provided

Practically every type of medical care ordinarily available to the population of large urban centers was provided by the Fort Benning medical service—including office and home treatment by doctors and nurses, bed care in the hospital, complete dental care, X-ray and laboratory services, treatment by specialists, and drugs, medicines and eye-glasses when necessary.

The administrative relations and use of the physical equipment were closely coordinated and integrated so that time wastes were minimized and overhead expenses reduced. According to the author's description, if a patient needs bed-care he is admitted to the hospital and is put in charge of the appropriate internist, surgeon or other specialist; if it is decided that he needs an X-ray, a blood chemistry test, a urinalysis, or an examination by a surgeon, by a laryngologist or a dentist, he merely walks down a corridor or across the hall;

if any physician wishes to consult with a colleague, it is easily and quickly arranged.

Costs Low

The per capita cost for the practically unlimited medical service at Fort Benning is computed by the author at $40.90 per year, but he believes that, if proper allowance were made for the special procedures required by Army administration which would not be necessary in a civilian population, this cost might be reduced to $35 or with less extensive hospitalization even to $30 per capita.

The study revealed that the average cost per maternity case cared for at the Fort Benning hospital totaled $129.24, whereas other studies of the Committee on the Costs of Medical Care have revealed that representative families whose total medical costs are similar to those at Fort Benning spend on the average of $246.17 per hospitalized maternity case.

The average illness requiring hospital care was found to cost $48.06 per case at Fort Benning, or $4.73 per day, including physicians' and surgeons' services. This compares favorably, the report points out, with an average cost of $67.38 among "representative families" whose incomes are less than $1,200 a year and with $468.62 for families whose annual incomes are $10,000 or more.

During the year studied, $0.72 per capita was spent at Fort Benning for drugs and medicines as compared with an expenditure by "representative families" of $4.86 per capita, or seven times as much.

Greater Volume of Services

In addition to the fact that the costs of the organized medical services at Fort Benning were lower than costs among comparable civilian groups elsewhere, the volume of services received was in general far in excess of that obtained by similar families on a conventional fee-for-service basis, according to the report.

At Fort Benning, 74 persons per 100 received dental care during the year, a total amount of dentistry which, according to the author, is at least three times the volume obtained by an ordinary population group.

The Fort Benning families received three times as many home and office calls per capita as did comparative "representative families," and were admitted to the hospital five times as frequently, it was disclosed. Twenty-one persons in a hundred were given eye refractions at Fort Benning, three times as many as in comparable representative families.

Preventive services were so much more numerous at Fort Benning than elsewhere that the author stated it would be absurd to tabulate comparative data.

Numerous Advantages

At Fort Benning, the report states, the personal relation between physician and patient is maintained; professional judgment, not cost, determines the amount of service which patients shall receive; the size of the medical staff can be adjusted to the needs of the population; the physicians, dentists, nurses, and others received stimulation and encouragement from close professional contacts with others in the service.

In conclusion, the author states that the study has indicated that this medical service, as operated under military auspices, may well serve as a pattern for a similar organization in civilian communities, where a co-ordinated agency of this kind is otherwise feasible and desirable. He believes that the plan effects integration of personnel and facilities. He found that large volumes of good medical care are provided at relatively low cost by efficient utilization of resources, by minimizing wastes arising from lack of co-ordination between personnel of various divisions and between personnel and patients, by emphasizing preventive services, and by reducing many useless and unwise expenditures common in the spending habits of people who purchase their medical care from unco-ordinated agencies.

DEATHS

Dr. Isaac Arnold McSwain, Paris; Vanderbilt Medical School, Nashville, 1889; aged 86; died October 30, following a brief illness.

Dr. R. M. Little, Martin; University of South, Sewanee, Medical Department, 1899; aged 54, died November 4.

RESOLUTIONS

Dr. I. A. McSwain, age 86, died at his home in Paris, Tennessee, on October 30, 1932. He was born in Henry County on December 4, 1845. At the age of 21, he enrolled in the Medical Department of Louisville University. He was a founder of the West Tennessee Medical and Surgical Association in 1891 and served as secretary until his death. He served a term as president of the State Medical Association and Tri-State Medical Association. His professional career has been perpetuated by two sons, Dr. J. Horace McSwain and Dr. George R. McSwain of Paris, and a grandson, Dr. Barton McSwain, a recent graduate of Vanderbilt School of Medicine.

Therefore, be it resolved, by the Tri-County Medical Society, consisting of Henry, Carroll, Benton, and Weakley Counties, in regular meeting assembled, this November 9, 1932;

First, that we deeply deplore the passing of Dr. McSwain and express our sense of professional and personal loss in his death.

Second, that we extend our sincere sympathy to the family of our departed friend in their great loss, and that we commend them to the all-wise and divine Comforter of us all, in their sorrow and bereavement.

Third, that we furnish a copy of these resolutions to the family of Dr. McSwain, a copy be sent to THE JOURNAL OF THE TENNESSEE STATE MEDICAL ASSOCIATION, and a copy be filed with the minutes of the Tri-County Medical Society.

Respectfully submitted by
Committee,
Tri-County Medical Society.

Divine Providence has removed from our midst our close associate and fellow physician, Dr. R. M. Little, of Martin; and due to his long tenure of office in this Association, we had come to know something of his true worth as a physician, as a citizen, and as a man. We feel, knowing his conscientious devotion to his calling, that his community, this Association, and the entire State suffered a distinct loss upon his death.

Therefore, be it resolved, by the Tri-County Medical Association, that we extend to his family our deepest sympathy in their great loss, and our sincere regret at his unexpected passing, knowing that he filled a place in this section of Tennessee which will be difficult, if not impossible, to fill.

Be it further resolved, that a copy of these resolutions be furnished his family, the Tennessee State Medical Association, and such portion of the press as the officers of the Association may see fit.

Committee,
Tri-County Medical Society.

NEWS NOTES AND COMMENTS

Dr. George McSwain, of Paris, was painfully injured while making a trip to Dresden. Fog, bright lights of an approaching car and a flat tire were to blame for the wreck.

The Boston Society of Psychiatry and Neurology, in October, invited Dr. Merrill Moore and Dr. H. Houston Merritt to appear on its program. The subject of their paper was, "Tumors of the Brain Associated with Marked Pleocytosis in the Cerebrospinal Fluid" (lantern slides).

Dr. John P. Henry announces the removal of his offices from the Polyclinic to the Sterick Building, Memphis. Practice limited to allergic diseases.

Announcement has been made that the American College of Physicians will hold its Seventeenth Annual Clinical Session at Montreal, with headquarters at the Windsor Hotel, February 6-10, 1933.

Dr. G. D. Lequire, of Maryville, has returned from a four months post graduate course in Vanderbilt University School of Medicine.

Dr. A. B. McTeer, of Rockford, is recovering from a serious attack of sickness.

The Square and Compass Fraternity of the University of Tennessee had a campfire supper on October 14. The Fraternity is composed of all Master Masons in the student body. The graduate committee are members of the faculty. A number of prominent Masons of Memphis are honorary members.

Report Comes From Lebanon Woman of Swindle

Information has been received that two crooks representing themselves as being from the Radium laboratories of St. Louis, have been operating in Tennessee. Dr. L. C. Walker, Jr., and Dr. Harris called on Mrs. T. J. Snoddy, Route 5, Lebanon, Tenn., and swindled her out of $250.00. These men performed the usual eye operation by putting a few drops of medicine in the eye and removed the "scale" from the eye, which usually is nothing more than a little piece of saturated cotton. They then prescribed a radium belt to be worn for 21 days and required $250.00 cash, agreeing to return all but $61.00 at the expiration of 21 days, when the belt is returned to them. This money was paid by Mrs. Snoddy on September 22, 1932, and nothing has been heard from the "Specialists" since. Dr. Walker is sandy haired, light gray eyes and looks at you kinder squint-eyed, age about 25 and weighs about 145 or 150 pounds. Dr. Harris is big, broad-shoulder, black hair, blue eyes, very nice-looking, about same age and weighs around 175 pounds—Tennessee Optometrist.

MEDICAL SOCIETIES

Bedford County:

Dr. and Mrs. J. W. Sutton entertained the society with a stag dinner October 20. Following a four-course dinner and a pleasant social hour the scientific and business session was carried out.

Benton, Carroll, Henry, Weakley Counties:

This society was addressed by Dr. Lucius Burch, of Nashville, on "Management of Certain Non-Surgical Disorders of Interest to the General Practitioner," and by Dr. W. R. Cate, of Nashville, on "Classification and Management of Nephritis."

Blount County:

Dr. J. B. Neil, of Knoxville, addressed the members of this society recently, taking as his subject "The Trigone and Vesicle Neck." Dr. Neil's address was illustrated by some splendid lantern slides.

Dr. E. T. Newell, of Chattanooga, appeared on the program of this society on November 3, reading a paper on "The Radiation and Surgical Treatment of Benign Uterine Hemorrhage."

Dr. Horton Casparis, of Nashville, was a recent visitor and gave a very interesting lecture on the subject of "Acute Respiratory Diseases of Childhood." This meeting was preceded by a dinner at Chilhowee Inn, Walland. Drs. Joe T. Smith and Oliver Hill, of Knoxville, were visitors on this occasion.

The Blount County Medical Society has been able to maintain its excellent attendance record thus far throughout this year. Inasmuch as this is the only medical society in the State outside of those in the large cities which holds weekly meetings it might be expected that the attendance might tend to fall off, yet with one exception every meeting has been held this year, and the attendance has increased rather than decreased. A scientific program is arranged for each meeting, six months in advance, and the membership is such that each member is expected to prepare a scientific paper each six months. The success of this experiment over a period of ten or twelve years has tended to prove that weekly meetings will maintain the interest of the physician in his medical society far better than the bi-weekly or monthly meetings.—J. A. McCulloch, M.D., Secretary.

Davidson County:

October 11—"Bronchoesophagoscopy with Steropticon Slides," by Dr. Richmond McKinney, Memphis, President of the American Bronchoscopic Society.

October 18—"Tumors of the Bladder," by Dr. H. L. Douglass. Discussed by Drs. J. C. Pennington, Charlie Anderson and T. D. McKinney.

October 25—"Case Reports. (1) Repair of traumatic hernia of diphragm. (2) Closure of defect in the chest wall by transplantation of diaphragm. (3) Suture of wound of the left ventricle of heart. (4) Suture of wound of thoracic aorta," by Dr. Alfred Blalock. Discussion opened by Drs. W. O. Floyd and Murray B. Davis.

November 1—"Progress of Obstetrics during the past Generation," by Dr. W. B. Anderson. Discussion opened by Drs. R. O. Tucker, Sam Cowan and Milton Smith Lewis.

November 8—"Neurosyphilis: An Analysis of the Vanderbilt University Hospital Material for a Period of Eight Years," by Dr. W. M. Dedmon.

November 15—Dr. Mont. R. Reid, of Cincinnati, will address the Academy.

Hamilton County:

The programs for the remainder of the year are as follows:

November 17—"Are Prostatectomies Becoming Obsolete?" by Dr. G. Madison Roberts.

November 24—Thanksgiving.

December 1—Election of officers.

December 8—"Anesthesia," by Dr. John S. Lundy, Rochester, Minnesota.

December 15—Memorial Meeting.

Hardin, Lawrence, Lewis, Perry and Wayne Counties:

The October meeting was held in Lawrenceburg. Twenty doctors were present. The following papers were read:

"Hand Infections," with motion pictures, by Dr. Geo. C. Williamson, Columbia. Discussion opened by Dr. Noah Danley, St. Joseph.

"Plastic Surgery in Children," by Dr. Beverly Douglas, Nashville. Discussion opened by Dr. G. C. Williamson.

"Dementia Præcox and Manic Depressive Insanity," by Dr. W. S. Farmer, Nashville. Discussion opened by Dr. Otis Whitlow, Savannah.

Johnson and Sullivan Counties:

On October 5, the society met at the General Shelby Hotel, Bristol, for supper. Essayists were Drs. A. K. Turner and V. M. Cox. Their subjects were "The Prevention and Treatment of Infectious Diseases" and "Maxillary Sinusitis and Treatment," respectively. A good attendance is reported.

Knox County:

October 11—"The Eye in Health and Disease," by Dr. R. H. Newman.

October 18—Dr. Eugene Abercrombie was the essayist.

November 1—"Treatment of Pneumonia," by Dr. H. C. Long.

Madison County:

On October 4, Dr. J. R. Thompson discussed "Amebiasis," reporting the treatment of the epidemic in the county. The usual case reports were given. A number of the members of the Tri-County Society were present by special invitation.

McMinn County:

The McMinn County Medical Society held their October meeting on the 13th, at the office of Dr. James R. Nankivell.

Dr. D. P. Brendle, of Englewood, gave the article which was discussed by the members of the meeting. The topic was, "Clinical Features of the Diagnosis and Treatment of Heart Failure."

The paper next month will be given by Dr. Joseph McGahhy, of Niota.

Montgomery County:

Two Kentucky counties, Christian and Todd, joined Montgomery in the October meeting. Buffet supper was served at the hospital, after which Dr. N. S. Shoffner, of Nashville, read a paper on "Hyperthyodism" and Dr. J. H. Litterer, of Nashville, discussed "Ascheim-Zondek." This lecture was illustrated by lantern slides shown by Howell Gholson, member of the high school faculty.

OTHER MEDICAL SOCIETIES

VANDERBILT UNIVERSITY MEDICAL SOCIETY
OCTOBER 7

1. Case Reports.

(a) "Wound of Ascending Portion of Thoracic Aorta."—Dr. Alfred Blalock.

A. F., colored male, age 18, entered the Vanderbilt University Hospital approximately 45 minutes after having been stabbed in chest with an ice pick. Physical signs and X-ray findings indicated hemopericardium. Through a left parasternal incision, the pericardium was exposed. It was filled with blood. A wound in the intrapericardial portion of the ascending aorta was sutured. Uneventful recovery.

Case discussed by Dr. Burwell.

(b) "A Case of Progressive Central Muscular Atrophy."—Dr. Hugh Morgan.

This case is of special interest because it clearly illustrates the progressive nature of the disease. Early in its course only the lower motor neuron was involved and the signs were those of chronic anterior poliomyelitis (the Aran-Duchenne type). After a few months upper motor neuron involvement led to the diagnosis of amyotrophic lateral sclerosis (Charcot type). Finally, fourteen months after the appearance of the initial symptoms there developed manifestations of progressive glosso-labio-laryngeal paralysis (Bulbar type). The case illustrates the importance of bearing in mind the progressive nature of the condition and the fallacy of considering the three types as constituting definite clinical entities.

Case discussed by Dr. Hibbitts and Dr. Litterer.

2. "Early Lesions Which Follow the Intraperitoneal Inoculation of Virulent and Non-Virulent Tubercle Bacilli."—Dr. C. E. Woodruff.

From a study of spread preparations of the omentum, stained by Ziehl-Neelsen's method, evidence is obtained which points to the possibility of multiplication of tubercle bacilli in the animal body by passage through a cycle as well as by direct division.

Paper discussed by Drs. Cunningham and Avery.

3. "Some Aspects of the Pathology of Vitamin Deficiencies."—Drs. K. E. Mason and Jack M. Wolfe and Mr. E. T. Ellison.

Studies indicate that lack of vitamin E exhibits itself only in tissue where cellular proliferation and differentiation are unusually rapid. The irreversible type of injury and the characteristic nuclear chromolysis observed in the testis of the rat suggest that this vitamin is essential, in some unexplained manner, for the maintenance of normal muclear structure. Studies on the histopathology of vitamin A deficiency indicates that this factor is peculiarly necessary for epithelial cells, probably due to its involvement in some metabolic process characteristic of those cells but not of other types of tissue cells. The possible relation of other vitamins to specific tissue function was briefly discussed.

Paper discussed by Drs. Casparis, Cunningham, and Leathers

WOMAN'S AUXILIARY

President—Mrs. Oliver Hill, Knoxville
President-Elect—Mrs. W. O. Floyd, Nashville
Chairman Press and Publicity—Mrs. T. G. Pollard, Nashville

NATIONAL CONVENTION, MILWAUKEE, JUNE 12-16, 1932

The regular monthly meeting of the Woman's Auxiliary to the Davidson County Medical Society was held Friday morning, November 4, in the parlors of the Y. W. C. A. The meeting was presided over by Mrs. Theodore Morford, President. Mrs. H. B. Brackin, Chairman of the Hygeia Committee, was in charge of the program, and introduced Dr. Frank Luton, assistant professor of psychiatry at Vanderbilt University Medical School. Dr. Luton spoke on Child Training and Mental Conditioning in Childhood.

A report by the Treasurer shows a balance on hand of $239.75. Eight new members were reported. It was announced that the State Auxiliary president, Mrs. Oliver Hill, of Knoxville, will be a guest in the city November 12, en route to the meeting of the Southern Medical Association to be held in Birmingham, November 16-18. A number of members from the Nashville organization will attend.

Following the meeting, the members motored to the Central State Hospital and were guests of Mrs. Brackin and Miss Estelle Farmer for luncheon in Dr. W. S. Farmer's apartment. After the luncheon, Dr. Farmer held a clinic for the visitors.

KNOX COUNTY

We were so grieved to hear of the death of Mrs. Walter Jackson Freeman, our National President, who died in Philadelphia, October 27, 1932. This is sad news to the entire Auxiliary and particularly so to the circle of Auxiliary women who had the good fortune to know her personally. She was to have been our guest on November 4, and we had planned a reception in her honor. We sincerely mourn her passing.

In our yearly program this year, we hope to co-operate in the various health education programs to reach schools and industrial centers. The audiometer, which was purchased by collecting Octagon soap coupons, was delivered in July and ready to be used in the schools this fall. A number of members from Knox County will attend the Southern Medical Meeting in Birmingham.

ABSTRACTS OF CURRENT LITERATURE

ANESTHESIA

By Hugh Barr, M.D.
Medical Arts Bldg., Nashville

Survey of the Anesthesias Given in 550 Brain Operations in the Years 1921 to 1930, Inclusive. Dorothy A. Wood, M.D., San Francisco, Calif. Current Researches in Anesthesia and Analgesia, September-October, 1932.

Anesthesia in brain operations must be smooth, as coughing, straining and struggling cause increase in intracranial pressure. Ether, therefore, was used in all the series. Twenty cases were started with local anesthesia, but were unsatisfactory and had to be finished with ether. Nitrous oxid is contra-indicated due to struggling and to cyanosis, both of which increase intracranial pressure.

After induction with nitrous oxid, ether was given by the drop method until relaxation was obtained. Then ether was administered by the Connell motor-driven ether vapor apparatus, the tube being fitted over a metal airway, thereby relieving the anesthetist of holding up the jaw and allowing him to remain out of the field of operation.

The average length of anesthesia was between three and four hours. Several operations took over five hours. Since 1929 barbital preparations have used preoperatively instead of morphine and atropine, although the atropine has been continued. To combat intracranial pressure and shock, a ventricular puncture is done if there is an internal hydrocephalus to reduce the volume of the dural contents. In conditions where this does not exist it is found efficacious to give Ringer's solution intraveinously to decrease brain tension.

In some cases the intracranial pressure was so severe that there occurred complete respiratory failure. All of these recovered when the pressure was relieved. One patient stopped breathing for eight minutes, but was kept alive by oxygen and artificial respiration until a ventricular puncture brought about normal breathing. Although many of the anesthesias were long and ether was used for all, postanesthetic complications were infrequent.

DERMATOLOGY

By E. E. Brown, M.D.
Doctors Building, Nashville

The Treatment of Herpes Zoster with Ultra-Violet Rays. Lumbross and Perez. La Tunsil Medicale, January, 1932.

They state that in their hands the ultra-violet ray has proven of the greatest value. Exposures were given daily for twelve days. Dosage two minutes at 60 C.M., increasing one minute each day. The relief of pain was very prompt.

Herpes Zoster & Pituitrin, by Dr. H. D. Niles, New York State Journal of Medicine, July 1, 1932.

He reports the use of pituitrin in herpes zoster on the basis of sixteen cases. Of the sixteen cases treated, eleven are well in an average of eight and a half days; two were improved; two were unimproved; in one the results were unknown. Compared with other methods of treatment, the same number of patients treated otherwise showed five well in an average of eleven days; one improved; four unimproved; in six the results were unknown.

OPHTHALMOLOGY

By Robert J. Warner, M.D.
Doctors Building, Nashville

Phlyctenular Conjunctivitis in Relation to Tuberculosis in Children. Canadian Medical Association Journal, March, 1932. H. I. Kinsey.

Besides reviewing the literature, the author reports on one hundred and thirty-six cases that were referred to the chest clinic at the Hospital for Sick Children in Toronto. Examination of the chest, physical and X-ray, revealed the presence of mediastinal tuberculosis in 75 of this group, pulmonary tuberculosis in 4, and negative chest findings in 29. The intracutaneous tuberculin test, using 1/20 of a milligram of old tuberculin, was positive in 98 cases and negative in 33. The author was unable to establish any definite relationship between the presence of tuberculosis and the presence of phlyctenular conjunctivitis.

Kinsey does not believe the tonsils are a factor. There were very few cases in July, August, and September. Seventy-five per cent came from poor homes. As regards treatment, the clinic is still continuing injections of tuberculin. In the earlier years bacillary emulsion was the tuberculin of choice, but recurrence of phlyctenules were more frequent than in the three or four years since antigen methylique was introduced, this tuberculin causing very little reaction. Needless to say, open-air and improved nutrition are stressed, and in the author's opinion these are essential factors.

ORTHOPEDIC SURGERY

By Robert F. Patterson, M.D.

Medical Arts Building, Knoxville

Alcoholization of Peripheral Motor Nerves of the Legs in Spastic Paralysis of Childhood, by Dr. Ralph R. Fitch, Rochester, N. Y.

In this article Dr. Fitch refers to the work done by Dr. Edwin W. Ryerson, of Chicago, who presented this subject in full in an article on "Cerebral Spastic Paralysis in Children." He concurs entirely with Dr. Ryerson's opinion as to the value of such therapy.

"Most of the physical disability which is caused by spastic paralysis is due to a lack of balance of power between spastic and non-spastic groups of muscles." He takes the view that most of the value of a permanent nature is obtained by persistent and efficient muscular training of the weaker groups of muscles. Numerous operations have been proposed and used to weaken the stronger groups and therefore permit muscular training. He refers especially to the Foerster operation, sympathectomies of Hunter and Royle, and the Stoffel operations, the last of which he thinks is of much value.

Owing to the difficulties in exactly estimating the amount of the nerve structures to remove to accomplish the weakening of the stronger groups of muscles, he uses an injection of 80 per cent alcohol directly into the nerves as they enter the muscles, producing thereby a paralysis of these nerves lasting from three to six months. This allows the weaker groups to contract and permits intensive muscle training. He does not advocate operations upon children who are too young, or who are too feeble-minded to coöperate in the muscle training.

He refers to twenty-eight cases of spastic paralysis operated upon, and states that his results were better with this than any other form of treatment he had used.

PEDIATRICS

By John M. Lee, M.D.

Doctors Building, Nashville

Diet, Nutrition and Infection. Alfred F. Hess, M.D., New York. The New England Journal of Medicine, October 13, 1932.

Clinical data furnished by observations made in a child-caring institution over a period of ten to fifteen years are the basis of this discussion. Numerous controlled observations seem to justify the following conclusions

"The antirachitic factor, whether given as ultraviolet irradiation, as irradiated ergosterol, or as cod-liver oil, does not increase the immunity of infants to respiratory infections.

"Respiratory infections are not due to a lack of vitamin A, and generally cannot be lessened by giving a diet rich in this factor even when supplemented with cod-liver oil.

"The average infant seems to receive an adequate amount of vitamin A in its milk, judging by the fact that xerosis of the eyes is exceedingly rare, and that no gain in weight or increase in immunity is brought about by adding vitamin to the diet. The same seems to hold true for older children and adults, in view of the infrequency of night blindness, the first sign of this deficiency.

"A lack of vitamin C may induce heightened susceptibility to infection of the respiratory tract. It may, however, induce merely local susceptibility without appreciable loss of systemic immunity. This peculiar phenomenon is manifested by the occurrence of typical nasal diphtheria, associated with virulent diphtheria bacilli, but a Schick reaction negative to highly potent solutions of toxin."

SURGERY — GENERAL AND ABDOMINAL

By John L. Dies, M.D.

1213 Exchange Building, Memphis

A Comparison of Exophthalmic Goiter in Boston and Chicago. With Special Reference to Iodine Reaction. Willard O. Thompson, M.D., Chicago, and James H. Means, M.D., Boston. The Journal of the American Medical Association, Vol. 99, No. 18, October 29, 1932.

The frequency of exophthalmic goiter in different parts of the world is unknown, because it is not a reportable disease. That it occurs in all races and in all climates seems to be established, but it is also thought to be more frequent and more severe in some races and in some parts of the world than others. Moschcowitz stated that it is common in the Hebrews and rare in the Negroes and Chinese. According to data from the draft board of the United States Army (1917-1918), the incidence was greater over the area in which endemic goiter was more common. In this area are the Great Lakes region and the Pacific Northwest. Mortality statistics for exophthalmic goiter for this country would appear to support the same conclusion. The mortality statistics for Great Britain also suggest that exophthalmic goiter is more common in many regions where endemic goiter abounds. Plummer stated that it has been recognized for years that the incidence of exophthalmic goiter is relatively high in the Mississippi Valley and the Great Lakes region, and he thought that the number of cases in the Northwestern States has progressively and periodically increased for the past fifty years. The data for the draft board showed that the incidence of endemic goiter was greater in the Ann Arbor area than in the Chicago area, a fact which is some interest in connection with the apparent difference in exophthalmic goiter between the two areas. On the other hand, there are those who feel that there is no relation between the incidence of endemic goiter and that of exophthalmic goiter. Thus about a generation ago Berry said exophthalmic goiter is not an endemic disease. My own inquiries on many goitrous districts, both in England and abroad, point in the same direction and tend to show that exophthalmic goiter is rare in places where ordinary goiter is common, and certainly is often found where ordinary is unknown. McCarrison said that it is "very rare in regions where goiter is endemic." Amongst the indigenous inhabitants of goitrous tracts of the Himalayas I have seen comparatively few cases in ten years. Mobius recognized that it may be relatively common in regions where endemic goiter is rare. It is a common disease all along the Atlantic Seaboard, where the incidence of endemic goiter is low.

Much is said about the greater severity of the disease in the Great Lakes region. One of us (W. O. T.) has had an opportunity to study the disease for comparatively long periods in both places. It has been his impression that clinically the disease is no more severe in Chicago than in Boston. However, regardless of theoretical considerations, the fact remains that, judged objectively from the standpoint of the initial basal metabolism, the reduction in basal metabolism during the administration of iodine and the ratio of males to females, the disease appears to be no more severe in Chicago than in Boston.

A comparison of exophthalmic goiter in Boston and Chicago has shown that—

1. The initial height of the basal metabolic rate is the same.
2. The reduction in basal metabolism during the administration of iodine is the same and occurs in the same length of time.
3. The minimum amount of iodine necessary to produce a maximum reduction in basal metabolism is probably about the same.
4. The sex ratio is approximately the same.
5. The age of onset is about the same.

These observations suggest that the severity of exophthalmic goiter is the same in Chicago as it is in Boston.

The severity of exophthalmic goiter, as judged by the average basal initial metabolism alone, does not seem to vary significantly in many clinics in different parts of the country.

UROLOGY

By Tom R. Barry, M.D., F.A.C.S.,
and F. K. Garvey, M.D.
Medical Building, Knoxville

Nephrostomy: Indications and Technique. H. Cabot and W. W. Holland. Surg., Gynec., & Obst., 1932, liv, 817.

Nephrostomy is indicated by the presence of obstruction which cannot be satisfactorily remedied by some other method. In general, it may be considered for the following conditions:

1. Acute obstruction of both ureters or a remaining ureter such as may occur in calculous anuria or malignant disease constricting the lower end of the ureter.
2. Hydronephrosis with or without infection in which the cause of the obstruction may be removable, but drainage of the kidney is indicated as a temporary measure to improve function. In some cases in this group a permanent nephrostomy may be necessary.
3. Renal calculi. There are at least two distinct groups of cases of renal calculi in which a temporary or permanent nephrostomy may be desirable. In one group are those in which there is considerable destruction from high-grade blocking of the outlet, but the removal of the stones will substantially relieve the difficulty. In some of these at least temporary nephrostomy may be desirable. Another group includes cases of bilateral stone formation of the type in which treatment by removal of the stones is not satisfactory. In a considerable number of these cases massive stone formation occurs on both sides with relatively few symptoms, but after a time leads to progressive failure of renal function, which will prove fatal if it is not relieved.
4. Carcinoma of the bladder. In cases of this condition thought suitable for total cystectomy nephrostomy may occasionally be indicated to divert the urinary stream.
5. Progressive atrophy of the kidneys, resulting from the failure of the muscular apparatus of the pelvis, ureters, and bladder to evacuate the urine satisfactorily.

6. Renal infection from high-grade obstruction. In this condition nephrostomy is done to prevent recurrent infection of the kidney and allow some amount of renal recovery.

Permanent nephrostomy should probably be reserved for cases in which the condition for which the nephrostomy is done cannot be remedied, or at least cannot be remedied to a permanently satisfactory extent. In a few cases a temporary nephrostomy must be made permanent on account of the failure of methods to relieve the obstruction. The duration of temporary nephrostomy will vary with the conditions for which it is done.

In the presence of distention of the renal pelvis, and particularly when that structure has been opened for the removal of calculi, drainage of the renal pelvis has been regarded as the indicated procedure. However, it is open to objections. The operation has been regarded as desirable, because it does not injure renal tissue, does not expose to the same danger of fulminating renal infection that may occur in an infected kidney, and is in all respects a much less serious procedure than pyelostomy. It may be done by methods which make it a quite trivial procedure. Pyelostomy has a much more limited scope than nephrostomy, and one which will tend to become even more limited in the future.

During the last year nephrostomy has been performed at the Mayo Clinic in thirty-three cases. The conditions for which it was done were nephrolithiasis, hydronephrosis, lesions of the nerves, obstruction of the lower part of the ureter, renal infection, and carcinoma of the bladder. Three of the patients died as the result of the operation. There was no postoperative bleeding and no fulminating renal infection.

The method suggested by Cabot and Holland is as follows:

The kidney having been exposed and mobilized to gain access to the upper part of the ureter and the renal pelvis, a small opening is made in the renal pelvis or, in cases of intrarenal pelvis, in the ureter. A uterine sound with a slightly bulbous tip bent in a "U" shape is introduced into this opening and passed out through the cortex at a point where it will drain the kidney by draining the lower calyx and will not be subjected to angulation as the kidney falls back into its normal position. A piece of stout silk is then attached to the bulbous tip of the sound and withdrawn through the kidney and out of the opening in the pelvis. To this silk is attached a No. 22 to 24 French-winged catheter. The end of the catheter is trimmed off to a point. By traction on the suture the catheter is then drawn accurately along the line created by the sound. It fits so tightly in the renal parenchyma that bleeding is entirely controlled. The small opening made in the renal pelvis is allowed to remain open until spontaneous closure takes place, which usually occurs within a week. The winged catheter is not fastened to the kidney or to any portion of the overlying tissues, the kidney being therefore allowed to lie in whatever position it falls. The catheter is left in place for about two weeks. At the end of that time it may be replaced by a straight tube. The removal of the catheter is facilitated by passing through it a stilette. Traction on the catheter will then smooth out the wings so that the catheter will not lacerate the renal tissues. If the straight tube is immediately replaced and if care is taken to see that it penetrates exactly the same distance, most satisfactory drainage is obtained.

THE JOURNAL

OF THE

TENNESSEE STATE MEDICAL ASSOCIATION

DEVOTED TO THE INTERESTS OF THE MEDICAL PROFESSION OF TENNESSEE

ISSUED MONTHLY, Under Direction of the Trustees

H. H. SHOULDERS, M.D., Secretary and Editor — W. M. HARDY, M.D., Asst. Secretary-Editor

OFFICE OF PUBLICATION, 510 DOCTORS BUILDING, NASHVILLE, TENNESSEE

Volume XXV — DECEMBER, 1932 — No. 12

PROCEEDINGS OF THE HOUSE OF DELEGATES

APRIL 12, 13, 14, 1932

Sessions of the House of Delegates held in connection with the Ninety-ninth Annual Meeting of the Tennessee State Medical Association, at Hotel Peabody, Memphis, were called to order by Speaker E. R. Zemp, of Knoxville.

A roll of the delegates, which had been properly certified to the Secretary, was called, which showed a quorum present.

Minutes of the previous meeting were adopted as published in the December, 1931, issue of the JOURNAL.

The House was organized by the formation of the following committees:

Committee on Credentials—A. F. Cooper, H. B. Clark, R. H. Monger.

Committee on Reports of Officers—L. T. Stem, S. F. McIntosh, B. S. Rhea.

Committee on Resolutions—H. B. Everett, S. S. Moody, J. H. Revington.

Committee on Amendment to Constitution and By-Laws—R. B. Wood, H. H. Shoulders.

Committee on Reports of Committees—W. B. Burns, T. B. Yancey, E. H. Baird.

Committee on Nominations—For East Tennessee: L. T. Stem, T. B. Yancey, John R. Smoot. For Middle Tennessee: B. S. Rhea, Henry Douglas, W. C. Williams. For West Tennessee: W. L. Williamson, Sam T. Parker, F. L. Roberts.

The following special committees were also formed:

First, a committee to draw up resolutions on the death of Dr. Robert Caldwell, consisting of H. B. Everett, L. T. Stem, H. H. Shoulders.

A committee on the death of Dr. J. P. Taylor, consisting of W. C. Williams and B. S. Rhea.

A committee was also appointed to communicate to Dr. C. N. Cowden the regrets of the House as to his inability to be present.

The report of the Secretary was then called for.

REPORT OF THE SECRETARY-EDITOR FOR THE CALENDAR YEAR 1931, TOGETHER WITH A SUPPLEMENTAL REPORT FOR THE FIRST QUARTER OF 1932

To the Members of the House of Delegates of the Tennessee State Medical Association:

Membership

The membership of the Association was 1570 at the end of 1931. There were 1640 enrolled as of December 31, 1930, a dropping off of 70 in the membership.

Association

There are 66 component societies; so far 60 have reported for the year 1931. There are 77 counties in these societies.

I would reiterate statements heretofore made in my reports to the House that the best societies in the state are those with a fairly large membership. It is my observation that societies with a membership of ten do not function nearly so well as a society with twenty-five members or more. The same reasons for combining smaller units into larger ones still obtain. Our office is powerless to do more than encourage such combinations. Members of the House would do well to take steps in the direction of combining smaller local units into larger ones. The Five County Society continues to be a glowing example of the advantages of these combinations.

Journal

Each issue of the JOURNAL was mailed on time. Each issue contained its full sixty-four pages, and some issues over sixty-four.

You are doubtless familiar with the editorial policy. You are familiar with the character and appearance of the JOURNAL, of the scientific papers and other matter on its reading pages. I take it also that you are familiar with the type of advertising that has appeared.

We have been delighted with commendations during the year. We have received few criticisms, either from advertisers or subscribers.

We have endeavored to make the JOURNAL attractive to the membership of this Association. Editorially, we have endeavored to uphold the ideals of organized medicine.

Finances

The gross income of the Association for the year 1931 was $14,364.95. This income was derived from the following sources:

Dues	$5,881.00
Medical Defense, S	1,706.00
Advertising	5,372.20
Interest on Investments	600.00
Exhibition Space	585.00
Cuts, Subscriptions, etc.	162.50
History Sales	33.00
Examination Blanks and Census	7.75
Refund of Travel Expense to Knoxville	17.50

The dues under the Medical Defense schedule amounted to $1,706.00, leaving a gross income to the Association, exclusive of the defense fund, of $12,658.95.

It will be observed that our income from advertising almost equaled our income from membership dues.

Our income from advertising, plus the income from investments and commercial exhibit spaces, amounts to more than the income from membership dues.

Particular attention is called to these figures for the reason that this Association is able to operate on a per capita dues of $4.00 per year because of these very facts. The Association, therefore, actually earns more than the members pay in dues.

Fiscal policies leading up to this state of affairs have been developed in the last three years. First, it was necessary to put our advertising on a sound business basis and to conduct that part of the affairs in a manner satisfactory to advertisers. It was also necessary to bring into the treasury of the Association revenue from commercial exhibits. It was also necessary to cut down on the cost of the meeting as much as possible. It was also necessary to make the proper investments of the funds of the Association to the end that these funds would help carry the load. By these maneuvers the Association is able to carry on without increasing the dues.

Expenditures

Our expenditures for the year 1931, exclusive of the defense fund, was $12,535.76.

The receipts exceeded disbursements by $123.19.

There were several items of expense in 1931, however, which will not apply in 1932. There will also be an increase in revenue in 1932 which did not apply in 1931. For these reasons and for the added reason that 1931 was probably the most difficult year in financial affairs ever experienced in this country, I feel that we must be content with this particular showing.

A complete analysis of the Auditor's report will not be made by me, as this will be covered in the Treasurer's report. I will, however, cite some figures for the purpose of making comparisons of specific items of income and expense for the years 1931 with 1930, even though the figures are not easily comparable for the reason that a number of bills were paid in the calendar year 1930 incident to the Centennial Celebration which were extraordinary expenses and will not be incurred again in all probability until another century rolls around. We can draw comparisons with reference to the primary items of income. They are as follows:

Dues, 1930	$6,530.00
Dues, 1931	5,881.00
Decrease	$ 649.00
Advertising, 1930	$4,943.74
Advertising, 1931	5,372.20
Increase	$ 478.46
Interest on investments, 1930	$ 707.83
Interest on investments, 1931	600.00
Decrease	$ 107.83

There was a total reduction in dues and income from investment amounting to $756.46. This loss was offset largely by an increase in our income from advertising amounting to $478.46.

Our income from advertising was increased in a hard year by special effort on special advertising, and on the directory department.

Disbursement

There was a reduction in the JOURNAL expense of $353.28.

There was a reduction in the Convention expense of $162.52.

There was a reduction in salaries of $400.00.

These figures are cited for the purpose of showing the membership of the House that the officers of the Association have endeavored to conduct its business affairs at a critical time in a way to insure the premanency, solvency and efficiency of the Association.

Medical Defense

The medical defense funds are handled by the officers of the Association, but the officers of the Association exercise no control over their expenditure. These expenditures are made on authorizations furnished by the Committee on Medical Defense, which is elected by the House.

Income and Disbursements for 1930 and 1931

1930

Receipts	$2,106.00
Disbursements	1,959.69
Income in excess of expenditures	$ 146.31

1931

Receipts	$1,706.00
Disbursements	1,976.00
Excess of disbursements over receipts	$ 270.00

Disbursements remained about the same for the two years. The receipts fell off $400.00.

The balance to the credit of the Medical Defense fund as of December, 1930, was $2,321.34. On December 31, 1931, it was $2,051.34. The balance shrunk $270.00.

For the First Quarter of 1932

Medical Defense income	$1,432.00
Medical Defense expenditure	1,224.60
Income in excess of expenditures	$ 207.40

Most of the income for medical defense has been received with dues for 1932. Bills paid or approved for payment in the first quarter of 1932 amount to more than one-half the receipts for medical defense for a whole year.

At this ratio of income and disbursement, if maintained, will dissipate the resources in about one year.

These figures are brought to your attention because it is your business to take notice of them.

Our membership as of March 31 was *1228* (*April 11, 1932, 1300*).

The number of local societies reporting is 60. These figures compare favorably with similar figures for 1930.

The membership of March 31, 1930, was 1237, a difference in favor of 1930 of 9.

Finances

A report of the Auditor for the year 1931 is available for your inspection. An audit for the first quarter of 1932 has not been made, but a statement from the bank of the balance above referred to is available for your inspection.

The spirit of organized medicine in Tennessee, we believe, has been maintained at a high pitch. In our opinion it will compare favorably with any state in the Union.

In conclusion, I wish to acknowledge the hearty coöperation of all officers and committees.

Respectfully submitted,
H. H. SHOULDERS,
April 12, 1932. Secretary-Editor.

This report was referred to the Committee on Reports of Officers.

The report of the Trustees was called for.

The report of the Trustees was read by J. O. Manier, Chairman of the Board.

To the House of Delegates of the Tennessee State Medical Association:

The regular semi-annual meeting of the Board of Trustees was held on Sunday, March 6, 1932, in the office of the Tennessee State Medical Association at Nashville. Those present were Drs. Jelks and McElroy, of Memphis; Dr. R. B. Wood, of Knoxville; and Dr. J. O. Manier, of Nashville.

The Trustees reviewed the financial statement for the year 1931, including the audit for that period, and were quite happy to find that the State Society had been able to live within its income, and, in fact, create a small surplus.

The details of the finances of the State Association are set out in the formal audit for the year and to some extent in the report of the Secretary made to this Body.

The Board of Trustees feels it wise at this time to suggest for the consideration of the House of Delegates certain tentative changes in the procedure of the House when in session. These changes are largely modeled on the procedure that is now in operation in the House of Delegates of the American Medical Association, and consist largely of having all reports read on Tuesday afternoon without discussion, but to be referred to the proper committee, which, after due consideration on the following day, can report back to the House of Delegates. At this time any member of the House will then be at liberty to discuss any matters contained in the various reports and resolutions.

Tentatively, your Board of Trustees would suggest the appointment by the Speaker of the House of Delegates of the following reference committees:

(a) Committee on Reports of Officers.

(b) Committee on Resolutions.

(c) Committee on Amendments to the Constitution and By-Laws.

(d) Committee on Reports of Committees.

(e) Such other reference committees as the House may deem proper.

In this connection, it is suggested that the above committees when appointed should be composed of one member from each grand division of the state.

Should the House of Delegates see fit to adopt the procedure recommended by the Trustees, we feel that it would facilitate the operations of the House, enable it to transact its business more thoroughly and with more dispatch, and at the same time would enable the members of the House of Delegates to take some part in the general meeting. Theoretically, members of the House of Delegates should represent the best cross section of their county organization and should be the type of men who could add much to the scientific interest of the general meeting if matters were so adjusted and they could be in attendance at the meeting. As the business of the House is conducted at the present time, any Delegate who conscientiously performs his duty as such and attends all meetings of the House is of necessity practically prevented from attendance on the general session.

Furthermore, your Board of Trustees felt that measures that might be introduced before the House of Delegates, either in the form of a resolution, committee report, etc., could be more properly considered by a small committee originally than by the House at large.

For the above reasons we are offering for your consideration this suggested change in the procedure of the House of Delegates.

J. O. MANIER,
Chairman, Board of Trustees.

This report was referred to the Committee on Reports of Officers.

REPORT OF AUDIT FOR YEAR ENDED DECEMBER 31, 1931

To the Chairman and Board of Directors, Tennessee State Medical Association,
Nashville, Tenn.

Sirs:

Pursuant to engagement, we have made an audit of the Cash Receipts and Disbursements of the Tennessee State Medical Association for the year ended December 31, 1931.

The results of our examination are presented in the accompanying comments and on exhibit and schedules designated as follows:

Exhibit "A"—State of Receipts and Disbursements for the Year Ended December 31, 1931

Schedule A-1—Statement of Receipts by Months for the Year Ended December 31, 1931.
Schedule A-2—Statement of Medical Defense Fund for the Year Ended December 31, 1931.
Schedule A-3—Cash Balance on December 31, 1931.

Comments on Audit

Cash, $1,159.46. This item represents the cash on deposit at the Nashville and American Trust Company on December 31, 1931, as shown by the reconciliation presented on Schedule A-3.

Cash Receipts appearing on the Receipts Register were traced into the depository or accounted for.

Cash Disbursements were verified by examination of the canceled checks as to signature and indorsements, and the amounts of the checks were compared with the entries in the Register which in all instances were deemed proper.

Investments, $10,000.00. The Association owned on December 31, 1931, First Mortgage Real Estate Notes bearing 6 per cent interest as follows:

Maker	*Date*	*Due*	*Amount*
S. H. Dillard and wife	6-1-29	6-1-32	$ 2 500.00
T. J. Haile, Jr., and wife	9-1-31	9-1-36	5,000.00
J. H. Horn and wife	6-1-29	6-1-32	2,500.00
Total			$10,000.00

The above notes are deposited for safe-keeping at the Nashville and American Trust Company, where confirmation was made by inspection thereof on January 23, 1932.

Analysis of Increase or Decrease in Funds

	General Fund	*Medical Defense*	*Combined*
Cash, December 31, 1931	($ 891.88)	$2,051.34	$ 1,159.46
Investments	10,000.00		10,000.00
Total Cash and Investments	$ 9,108.12	$2,051.34	$11,159.46
Cash, January 1, 1931	($ 1,015.07)	$2,321.34	$ 1,306.27
Investments	10,000.00		10,000.00
Total Cash and Investments	$ 8,984.93	$2,321.34	$11,306.27
Increase or ( ) Decrease	$ 123.19	($270.00)	($146.81)

General

A fire insurance policy on Office Furniture and Fixtures in the amount of $500.00 and a fidelity bond of $10,000.00 on the Treasurer, Dr. J. O. Manier, were in effect on December 31, 1931, both of which will be subject to renewal in the year 1932.

Tests were made of receipts from members and advertisers, and no omissions of entering receipts in the Receipt Register were found.

One-half month's salary was due Dr. H. H. Shoulders in the amount of $62.50 at December 31, 1931.

Twelve issues of the JOURNAL of the Tennessee State Medical Association were printed during the year 1931, all of which were paid for during the year, the cost thereof being included in disbursements on Exhibit "A."

Advertising accounts due are not listed in this report. A schedule thereof has been prepared and left with the Secretary.

Respectfully submitted,
OSBORN & DUNCAN.
HILARY H. OSBORN,
Certified Public Accountant.

January 22, 1932.

EXHIBIT "A"

Statement of Receipts and Disbursements for the Year Ended December 31, 1931

RECEIPTS

Dues	$5,881.00	
Medical Defense, Schedule A-2	1,706.00	
Advertising	5,372.20	
Interest on Investments	600.00	
Exhibition Space	585.00	
Cuts, Subscriptions, etc.	162.50	
History Sales	33.00	
Examination Blanks and Census	7.75	
Refund of Travel Expense to Knoxville	17.50	
Total Receipts, Schedule A-1		$14,364.95

DISBURSEMENTS

Medical Defense, Schedule A-2		$1,976.00
Medical JOURNALS (21,150 copies):		
Printing twelve issues, January, 1931, to December, 1931, inclusive	$3,447.50	
Cuts, Photographs and Extras	434.50	
Postage	297.00	$4,179.00
Convention Expense:		
Reporting Service	$ 445.01	
Programs and Supplies	273.56	
Addressing and Mailing Programs	51.00	
Badges	38.35	
Travel Expense to Arrange Exhibit Space	25.00	
Guests, Hotel Expense	66.68	
Exhibits Charge (½ of Receipts)	292.50	
Expense, Dr. Frank Lahey to Knoxville	139.03	$1,331.13
Salaries:		
Dr. H. H. Shoulders, Secretary-Editor	$1,500.00	
Dr. W. M. Hardy, Assistant Secretary-Editor	2,000.00	
Miss Willard Batey	1,500.00	
Dr. J. O. Manier, Treasurer	100.00	$5,100.00
General Expenses and Other Disbursements:		
Expenses, three Delegates to A. M. A. Convention	$ 263.05	
Expenses, Trustees' Meeting	64.76	
Office Rent	660.00	
Stationery, Printing and Office Supplies	445.57	
Postage	120.00	
Auditing	75.00	
Refund of Dues	21.00	
Bond, Dr. Manier, Treasurer	25.00	
Press Clipping Service	36.00	

Travel Expense to Knoxville	100.00		
Legislative Bureau Service	52.25		
Miscellaneous	63.00	$1,925.63	
Total Disbursements			$14,511.76
Excess of Disbursements over Receipts			$ 146.81
Represented by:			
Cash Balance, 1-1-1931		$1,306.27	
Less, Cash Balance, 12-31-1931, Schedule A-3		1,159.46	
Decrease in Cash Balance			$ 146.81

SCHEDULE A-1

Statement of Receipts by Months for the Year Ended December 31, 1931

Month	*Dues*	*Medical Defense*	*Advertising*	*Investment Interest*	*Miscellaneous*	*Total*
Jan.	$2,400.00	$ 874.00	$ 454.97	$150.00	$ 7.00	$ 3,885.97
Feb.	832.00	196.00	350.72		56.75	1,435.47
March	1,016.00	226.00	396.52	150.00	3.00	1,791.52
April	464.00	114.00	619.09		510 50	1,707.59
May	268.00	72.00	421.72		79.00	840.72
June	181.00	42.00	404.79	150.00	78.00	855.79
July	96.00	24.00	573.44		10.00	703.44
August	192 00	48.00	371.27		34.00	645.27
Sept.	40.00	8.00	371.67		6.00	425.67
Oct.	36.00	4.00	403.94	150.00	8.50	602.44
Nov.	32.00	6.00	440.77		5.00	483.77
Dec.	324.00	92.00	563.30		8.00	987.30
Totals,	$5,881.00	$1,706.00	$5,372.20	$600.00	$805.75*	

Total Receipts for the year ended 12-31-1931, Exhibit "A" $14,364.95

*Receipts from Cuts, Subscriptions, Census, Examination Blanks, Exhibit Booths and History.

SCHEDULE A-2

Statement of Medical Defense Fund for the Year Ended December 31, 1931

RECEIPTS

Received from Members $1,706.00

DISBURSEMENTS

2-14	Adams, Donelson & Pope, legal services (case J. A. Campbell vs. Dr. M. W. Holehan		$ 100.00	
2-14	Refund of Medical Defense fee, Dr. R. L. Greer		2.00	
2-14	Refund of Medical Defense fee, Dr. W. P. Wood		2.00	
2-14	Adams, Donelson & Pope (Mrs. Clara Reed vs. Dr. J. E. Robinson)		25.00	
2-28	Horace Frierson, Jr. (Mrs. Howard Whiteside vs. Dr. Watt Yeiser		125.00	
3-31	Dr. S. R. Miller, clerical work, January, February, and March	$ 7.50		
3-10	Dr. S. R. Miller, stamps	2.00	9 50	
4-23	Lillard & Webb, two days' trial in suit of N. J. Duggan vs. Dr. L. C. Ogle (mistrial)		150.00	
4-23	Miss Catherine Clark, taking testimony, 106 pages, N. J. Duggan vs. Dr. L. C. Ogle		31.80	
4-23	Cates, Smith & Long, fee for services in case of Ed T. and Dora M. Mitchell vs. W. S. Nash		50.00	
4-23	W. M. Satterfield, April 6, attendance and reporting deposition of Dr. Cecil E. Ward, case of Morelock vs. Meeker	2.00		
	April 7, transcript, 30 pages	15.00	17.00	
4-23	Adams, Donelson & Pope, case of Mrs. H. B. Morelock vs. Dr. Sidney Meeker		175.00	
4-23	Allen & Williams, April 8, reporting trial of Mrs. H. B. Morelock vs. Dr. Sidney Meeker		10.00	
5-15	Gates, Smith & Long, retainer fee and first day of trial, Lester Rupe vs. Dr. A. L. Rule	100.00		
	Fee before J. P. and second day of trial, Lester Rupe vs. Dr. A. L. Rule	25.00	125.00	
5-15	Adams, Donelson & Pope, case of Dr. Eugene Rosamond vs. Brooks H. Grimes		125.00	
6-3	Larew Printing Co. 2,000 letterheads	9.50		
	1,000 envelopes	6.00	15.50	
6-3	Miss Edith Bradburry, Court Reporter, L. C. Rupe vs. Dr. A. L. Rule		10.00	
6-16	C. P. Hutcheson, case of Albert and T. M. Shubert vs. Dr. S. D. Davis, Sparta		150.00	
6-16	Adams, Donelson & Pope, case of Cecil Curry Vaughan vs. Dr. W. G. Alford		175.00	
7-7	Dr. S. R. Miller, Chairman Medical Defense Committee, Letter file	.60		
	Clerical work, April, May and June	7.50	8.10	
7-7	Thos. G. Hinson, three days' services in trial of Bennett vs. Dr. B. Gaston, Lebanon		175.00	
8-17	Brown & Jackson, case of Mrs. Mary Lou Davis vs. Dr. E. B. Allen		100.00	
10-15	Dr. S. R. Miller, Chairman Medical Defense Committee, Stamps	1.00		
	Clerical work, July, August and September	7.50	8.50	
10-30	Brown & Jackson, case of Mrs. Mary Lou Davis vs. Dr. E. B. Allen et al., preparation second trial		50.00	
12-8	Pearson & Hewgley, balance fees, case of J. B. Drueke et al. vs. Drs. J. L. Crook, R. S. Brown and J. L. Fields		50.00	
12-8	Adams, Donelson & Pope, November fee, case of Hazel McCain Limerick by next friend vs. Dr. John E. Cox, and Mr. and Mrs. Hugh McCain vs. Dr. John E. Cox		200.00	
12-8	Adams, Donelson & Pope, ½ day arguing motions in case of Eugenia Lee vs. Drs. Campbell and Speed, fee	35.00		
	Telephone toll	1.60	36.60	
12-28	Adams, Donelson & Pope, case of E. C. Gross vs. Dr. C. D. Blossingame		50.00	
	Total Disbursements for the year ended December 31, 1931			$1,976.00
	Excess of Disbursements over Receipts			$ 270.00
	Represented by:			
	Cash and Investments on deposit at the Nashville and American Trust Co., December 31, 1930		$2,321.34	
	Less, *Cash and Investments on deposit at the Nashville and American Trust Co., December 31, 1931		2,051.43	
	Decrease in Medical Defense Fund			$ 270.00

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*Included in the amount of $1,159.46 Cash Balance as Reflected on Exhibit "A" and also represented by Investments on deposit at the Nashville and American Trust Co. for safekeeping.

SCHEDULE A-3

Cash Balance December 31, 1931

12-31-1931 Balance on deposit in the Nashville and American Trust Co., per Bank's Statement $1,212.46

Deduct—Outstanding Checks:

Check No.	*Payee*	*Amount*	
170	Central Press Clipping Service	$ 3.00	
48	Adams, Donelson & Pope	50.00	
	Total Outstanding Checks		$ 53.00

12-31-1931 Cash Balance $1,159.46

The report of the Delegates to the American Medical Association was read by E. G. Wood.

To the House of Delegates, Tennessee State Medical Association—Report of the American Medical Association at Philadelphia:

The eighty-second annual meeting of the American Medical Association, held in Philadelphia, June 8-12, was one of the largest and most successful in its history. Approximately seven thousand fellows were in attendance.

In his address to the House, President Dr. William Gerry Morgan, of Washington, D. C., paid the highest tribute to three of the workers of the A. M. A.: Dr. Olin West, Dr. Morris Fishbein, and Dr. Wm. C. Woodward. Also he spoke of favoring the House of the A. M. A. to remain in the geographic center of our land in Chicago.

The secretary's report shows a membership in the American Medical Association slightly in excess of 100,000, the largest in the history of the association; of this number, over 65,000 were on the fellowship roster. Tennessee is credited with 1,647 members and 758 fellows for the year 1931.

Tennessee was represented by its full quota of three delegates, all present at all sessions.

The meeting of the association consisted of four features:

1. The House of Delegates.
2. The Scientific Sessions.
3. The Scientific Exhibits.
4. The Technical Exhibits.

The House of Delegates met in regular session each day and discussed problems of administration, among them the very important subjects of state medicine, medical treatment of veterans of the World War, and prohibition.

The report of the Board of Trustees covered sixty-one pages in the Handbook. Among other things it called particular attention to the marked increase in the work of the Association which now requires the services of more than 500 full-time employees in the headquarters building in Chicago. The gross earnings of the JOURNAL were $1,773,220.18, while the JOURNAL operating expenses were $993,174.24, leaving net earnings from the JOURNAL of $780,045.73. The miscellaneous income was $48,010.80 and Association income $47,097.07, making a total gross income of $875,153.80. All expenses amounted to $465,428.16, leaving a net income for the year 1930 of $409,725.64. Many additions and improvements have been made in the Association's physical equipment. A new rotary press with a capacity of 96 pages was purchased at a cost exceeding $70,000.00 and is now in operation. The sum of $750,000.00 has been set aside as the nucleus of a building fund, to which will be added more from time to time in order to erect a building sufficiently large to care for all of the activities of the Association. The net worth of the Association, December 31, 1930, was $2,802,369.63.

The House of Delegates appears to have literally taken the "bull by the horns" and it is believed that the medical profession is today more determined than ever that it shall take care of the business of their own profession and not let it be done by outside parties. The policy of the federal government of rendering medical and hospital benefits to veterans of the World War with non-service connected disabilities was bitterly attacked by the House of Delegates, and strong representations were made to the Congress and to the American Legion to abandon the policy and substitute therefor a plan of disability insurance benefits.

A resolution of far-reaching importance and bearing upon the economic situation of the profession and the fundamental principle of government was introduced and adopted by the House of Delegates as follows:

Resolution on the Policy of Rendering Medical and Hospital Benefits to Veterans With Non-Service Connected Disabilities

Dr. H. H. Shoulders, Tennessee, presented the following resolutions:

Whereas, the federal government has inaugurated the policy of rendering medical and hospital benefits to veterans of the World War with non-service connected disabilities; and

Whereas, this policy was inaugurated over the opposition of the American Medical Association; and

Whereas, the policy now in force, if carried to its logical conclusion, involves the construction, the staffing, and the maintenance of a sufficient number of hospitals to accommodate the hospital needs of all the veterans of the World War; and

Whereas, such a policy places the federal government in unnecessary and unjust competition with the civilian hospitals and the medical profession of the United States; and

Whereas, the present policy is of unequal benefit to veterans by reason of the fact that many disabled veterans cannot (for one reason or another) avail themselves of the benefit; therefore be it

Resolved, That the House of Delegates of the American Medical Association petition the Congress of the United States and the American Legion to abandon the policy of rendering hospital and medical benefits to veterans of the World War with non-service connected disability, and substitute therefor a plan of disability insurance benefits with the following provisions:

First, the creation of a Bureau of Disability insurance in the Veterans' Bureau as now constituted.

Second, the issuance of a disability insurance policy to each veteran with a disability benefit clause, as follows:

(a) The payment of a weekly cash benefit during a period of total disability, and

(b) The payment of liberal hospital benefit, sufficient to cover the hospital expenses of a veteran during a period of hospitalization for any disability. Such benefits to be paid to a veteran on satisfactory proof of total disability, and

(c) Such other provisions as are necessary for the proper administration of the act.

Be it further

Resolved, That the proper officers of this association be instructed to approach the officers of the American Legion with the view of securing the adoption of the policy above set out as a part of the legislative program of the American Legion.

And be it further

Resolved, That each state medical association be requested to form a committee whose duty it will be to approach the state and local Legion posts throughout the country with a view to securing the adoption of this program by them.

A distinguished feature of this session was the elaborate use of the radio for coincident education of the public. For each day the Philadelphia County Medical Society arranged a series of public lectures, which were broadcast on the radio; also innumerable radio talks, and a full hour of radio education on the National Broadcasting chain. The scientific assembly of the association consisted of fifteen sections, at which about three hundred papers were read and discussed.

The Scientific Exhibit was the subject of numercus encomiums. It included a half mile of aisles and so many exhibits that a visitor who cared to spend fifteen minutes in each might well have utilized the entire week in this display alone. This department of the work is now recognized as one of the most valuable features of the annual session; it has been carried to a high point and represents a model for similar exhibits on a smaller scale throughout the world.

The clinical lecture program which takes place on the first two days of the Annual Session was attended regularly by a changing audience of one thousand listeners. Here eminent clinicians discussed problems of recent interest in scientific medicine and concerned themselves particularly with the clinical application of such knowledge. Thus special emphasis was laid in the Philadelphia Session on the treatment of disorders affecting the blood, on fungus infection of the skin, on syphilis, on deficiency diseases, on arthritis, on infantile paralysis and on diabetes. These clinical lectures constituted a veritable postgraduate course in practical medicine. Their increasing popularity testifies to the fact that they meet a definite need. The American Medical Association in its annual session is endeavoring to provide Fellows of the Association with clinical education as good as or better than that available in any other group or in any other way.

The great Technical Exhibit was beautifully elaborated with memorial arches named for heroes of medicine. Exhibitors had plenty of light and space, and left Philadelphia more than satisfied. Indeed, one exhibitor reported that the assistants in his booth had interviewed 3,600 persons during the annual session. An average detail man sees from eight to ten physicians each day; hence the work in this exhibit represented 360 days of work for one detail man, or 70 of work for the five men who were in the booth.

Report of reference committee on reapportionment of delegates was presented by Dr. West, chairman. The present apportionment of delegates is on the basis of one delegate for each 775 members or fraction thereof.

The By-Laws provide that the total membership of the House of Delegates shall not exceed 175.

On the basis of one delegate for each 800 members the total membership of the House would be 173, which is the present membership. Had this apportionment been upon a basis of one for each 825 members, Tennessee would have thereby lost one delegate.

President E. Starr Judd, in his president's address before the association, discussed emphatically some of the outstanding problems of the profession.

Individual relationship of the physician and the patient is now, and always will be, the crux of medical practice. He also spoke at length of Medical Education and made comparison of same before and after the formation of the A. M. A. and particularly after the council on Medical Education and Hospitals was established.

Specialization as it exists in many fields was abused, but the crying need was for real specialists and was upheld.

In closing he spoke of philosophy in medicine, the first field of which is logic, and the second is esthetics, or the philosophy of the beautiful, both in art and in nature.

The following officers were elected:

President-elect, E. H. Cary, Dallas, Texas.

Vice-President, George C. Yeager, Philadelphia.

Secretary, Olin West, Chicago.

Speaker of the House of Delegates, Fred C. Warnshuis, Grand Rapids, Mich.

Next meeting place: New Orleans.

This report was ordered filed among the archives.

Following the report of the Delegates to the A. M. A., H. H. Shoulders told the House of Delegates of the work done in promoting the insurance disability plan for veterans.

The report of the Medical Defense Committee was read by H. B. Everett, Memphis, inasmuch as S. R. Miller, Chairman of the committee, was absent.

To the House of Delegates of the Tennessee State Medical Association.

Gentlemen:

In submitting the eighteenth annual report of this committee's work, we report the most active year in our history.

We had twenty-one suits at issue in our last report, and sixteen new suits were reported in the year. Two non-suits were refiled, one of which was from last year. Numerous threats of suits have been reported, but few of them resulted in suits.

We have therefore handled thirty-nine suits besides numerous threats during the year. Four suits have been won in the Circuit Court, and one in the Court of Appeals.

One suit was compromised for $1,200.00 by the insurance company, without the advice of this committee. Two resulted in judgment, one for $250.00 and one for $600.00, besides one lost in the Circuit Court and won in the Court of Appeals. Three were thrown out of the Circuit Court and one out of the Federal Court.

Two suits were refused defense, because the defendant doctor had not paid his defense fee.

We had on January 1, 1932, twenty-five suits at issue. This includes several very old cases in which the plaintiff and his counsel are very indifferent, and will be eventually stricken from the court dockets.

We have adopted a questionnaire to be filled out by the defendant in each suit. Formerly these questions were asked in a personal letter, but not one ever furnished the full information, and after two or three personal letters, some or much of the information was not furnished. These questionnaires work much better, but still often require a second or third letter.

We are endeavoring now to keep accurate information as to the question of suits being filed on Pauper's Oath. The last thirty-eight suits have been investigated, and thirty were filed on Pauper's Oath; three were not, and five are unknown. Often we cannot get this information from the doctor, but a personal letter to our counsel or the clerk of the court provides the information. We also wish to provide a questionnaire for our counsel's final report. They, like the defendant doctor, are often too brief in a personal letter, and leave us to assume too much of the record.

Our statistics must be based on established facts. If it is practical to do so, we wish to begin collecting the information as to the cost of each suit, the large majority of which is expense to the county or the state.

With the statistics as to the number of suits on Pauper's Oath, and the cost of each suit, we may be able to supply a future legislature with valuable figures as to much cost to the state and counties, and suggest a reasonable and equitable remedy for prevention of some of the waste. If only a law could be enacted to authorize the judge to prevent refiling of worthless non-suits. Such a law alone would save the state and counties much costs. Such suits in one county alone have cost probably more than a thousand dollars, and the suits were without merit. Of course the plaintiff hoped for a compromise.

It would be useless to undertake any remedy along this line, until we can get some worth-while statistics. It will then require the service of an aggressive, able attorney to prepare the proper character of bill to offer to the legislature.

It should protect the state and county and the doctor against many expensive suits without any merit. It would likewise not bar any citizen who has had a preventable wrong done him by careless or improper treatment. It will be difficult to formulate such a law to conform with all constitutional questions.

The present laws are fair and equitable for defense. The law requires the doctor to have average qualifications and skill, and use average care. It does not require that he be the best or even equal to the best in his community. It does not require him to be even the average of a larger and more advantageous community, or even of specialists or super-specialists of his own community. Therefore almost all of our members can qualify as to average training and skill, and unless he has been neglectful in some way is usually vindicated, even if a hard fight is necessary.

The last year has been our hardest year. Plaintiffs and their counsel have been more aggressive than in former years. This has accounted for our larger expenses.

Likewise the employment of associate counsel, in those cases having old line insurance, has added materially to our expense in the last two or three years. Formerly, except in an occasional case of doubtful outcome, we gave all moral support, but did not have a paid counsel.

On April 6, 1932, Secretary Shoulders reported:

Receipts for Medical Defense Committee, 1931	$1,706.00
Disbursements for Medical Defense Committee, 1931	1,976.00
Excess of disbursements over receipts	$ 270.00
Balance on deposit, December 31, 1931	$2,051.34
Former year receipts over disbursements was	$ 146.31

We have always had a balance left until this year, and the deficit is comparatively small.

In 1929—1190 members paid defense fees,
In 1930—1053 members paid defense fees,
In 1931— 853 members paid defense fees.

Thus 200 fewer members paid last year than the year before. We will therefore have fewer members entitled to defense.

The general financial depression of doctors, as well as others, has been the only cause, as far as this committee is aware, for the fewer number of members paying the defense fee. The committee still feels that the payment for medical defense should be left to the option of the member, or the County Society.

H. B. EVERETT.
H. H. SHOULDERS.

This report was referred to the Committee on Reports of Committees.

The report of the Committee on Scientific Work. The chairman of this committee submitted program as evidence of their activities. The Speaker did not consider it necessary to refer the report to a committee.

The report of the Committee on Public Policy and Legislation was called for. The chairman was absent. Dr. L. T. Stem read a resolution seeking the approval of a resolution passed by the American Bar Association.

April 2, 1932.

Be it Resolved, That the Tennessee State Medical Association go on record as approving the resolutions which the American Bar Association passed at its meeting in Memphis in 1929, and that the State Medical Association appoint a committee to see that this is brought before the next session of the State Legislature, and to assist in getting it passed. The resolutions as adopted by the American Bar Association are as follows:

I. *Resolved,* That the American Bar Association go on record as stating the following matters to be desirable:

(1) That there be available to every criminal and juvenile court a psychiatric service to assist the court in the disposition of offenders.

(2) That no criminal be sentenced for any felony in any case in which the judge has any discretion as to the sentence until there be filed as a part of the record a psychiatric report.

(3) That there be a psychiatric service available to every penal and correctional institution.

(4) That there be a psychiatric report on every prisoner convicted of a felony before he is released.

(5) That there be established in each state a complete system of administrative transfer and parole, and that there be no decision for or against any parole or any transfer from one institution to another without a psychiatric report.

II. *Resolved* by the American Bar Association, That the various state and local associations be requested to give consideration to the recommendations in Resolution I, as a part of their programs during the coming year, and for their respective state and local medical associations.

III. *Resolved,* That the Committee on Psychiatric Jurisprudence be continued for further study of this field, in coöperation with committees for the Amerian Psychiatric Association and the American Medical Association, and that it be empowered to adopt such means as in its judgment are best suited to effectuate the purpose of these resolutions.

This was referred to the Committee on Resolutions.

J. A. McIntosh proposed the following resolution:

Whereas, it is the practice of the state, county and municipal governments of Tennessee to appoint non-medical coroners who are not competent to determine the causes of death; therefore it be

Resolved, That the Tennessee State Medical Association, in session at Memphis, Tenn., April 13, 1932, respectfully recommends to the state, county and municipal governments that only medical men be appointed to the office of coroner, in order that the duties incumbent upon that office may be handled more efficiently and more intelligently.

Respectfully submitted,

J. A. McINTOSH.

The resolution was referred by the Speaker to the Committee on Resolutions.

The report of the Committee on Public Health was called for. Tom Barry, Chairman, reported that the work of his committee had been taken over by the Liaison Committee, and that he had no further report.

The report of the Committee on Cancer was called for. Battle Malone, Chairman, read the report as follows:

April 12, 1932.

It is recommended that a cancer program be put on by each of the component medical societies of the State Association. This meeting is to be considered educational and shall be one to which the public is invited. It shall be fostered by the component societies, who will have the coöperation of the local health officer and the representative of the American Society for the Control of Cancer. Such help as may be desired shall be furnished by the Cancer Committee of the State Medical Association, who will assist in supplying speakers, securing of films and distribution of material bearing on cancer control.

BATTLE MALONE,
Chairman, Cancer Committee.

This report was referred to the Committee on the Report of Committees.

The report of the Committee on Medical Education was called for. In the absence of the Chairman, no report was made.

The report of the Liaison Committee was called for. This report was read by W. C. Dixon, Nashville.

REPORT OF LIAISON COMMITTEE

The Liaison Committee was enlarged and its duties outlined by an amendment to the By-Laws adopted at the 1931 meeting of the Tennessee State Medical Association. The section of the amendment outlining the duties of the committee is as follows:

"It shall be the duty of this committee to confer with the officials of the Department of Health of the state in matters of policy affecting the profession of the state; and it shall be the further duty of this committee to confer with any member or members of this Association in matters concerning the activities of the Department of Health of the state. Provided, that all matters over which this committee shall have jurisdiction shall be presented to the committee, through the Chairman, in writing."

The committee was appointed in November, 1931. Since that time two meetings have been held.

At the first meeting Dr. Shoulders was asked to explain the purpose of the committee in the editorial columns of the JOURNAL. This was done. At a later date a personal letter was written to each member of the Association setting forth the purpose of the committee and expressing a willingness to consider any matters brought to its attention. No complaints have been filed with the committee.

The members of the committee have given a great deal of thought to the problem of the public health, the public health department, the practitioner of medicine, and their relations to one another.

The committee held a conference at its last meeting with Dr. Bishop, State Commissioner of Health, and individual members of the committee have had conferences with Dr. Bishop, with other health workers in the state, and with numerous physicians.

As a result of its study, the committee has two recommendations to make to the House of Delegates. The first of these is that there shall be formed a *Public Health Council*, whose members shall be licensed practitioners of medicine or dentistry, and who shall be members of the Tennessee State Medical Association or the Tennessee State Dental Association. There would be seven members of this council; two physicians from each grand division of the state, and one dentist from the state at large. The medical members would be appointed from a list of six members from each grand division of the state, nominated to the Governor by the House of Delegates of the Tennessee State Medical Association. The dental member from the state at large would be appointed by the Governor from a list of three nominated to him by the State Dental Association. The terms of office of the members of the council would be so arranged that a new member would be appointed by the Governor each year. The council would elect its own officers, and a secretary, not a member of the council, the latter being the executive officer or health commissioner of the state. The creation of this council would be by legislative enactment, and its duties and powers would be defined in the bill.

The Liaison Committee feels that such a council would be a direct connecting link between the Department of Health and the profession. Such contact, we believe, would result in molding the policy of the Health Department in such a way that the interest of the public, the Department, and the profession would be best served.

The committee also recommends for the consideration of the House of Delegates a plan of expansion of County Boards of Health, whereby the County Boards of Health would have as members, three physicians, in counties where there be sufficient physicians; said members to be elected by the County Court from a list of nominations made to the court by the County Medical Society.

It is our feeling that such a relationship between the County Medical Society and the County Health Department would be beneficial to both.

Our second recommendation concerns the campaign which the health organizations carry on continuously, to secure immunization of the public against certain diseases, such as diphtheria, typhoid fever and smallpox. A good deal of the effort of the State Health Department is directed to this campaign. It is our feeling that this work should be done by the private practitioner, if possible. In order that this may be accomplished it is necessary for the practitioner to realize his responsibility in the matter, and be willing to shoulder this responsibility, to the end that a suitable body of immunes be developed in every community.

We feel that a series of meetings in the various County or District Societies, sponsored by the Tennessee State Medical Association, in coöperation with the State Health Department, devoted to this subject would serve to focus the attention of the profession on this problem.

Suitable speakers, representing the Tennessee State Medical Association, could emphasize the importance of immunization, the results that could be expected, and the technique of the various procedures. If the profession would assume the work of immunization, the State Health Department could devote its energies to an educational campaign, urging the people to seek this service from their physicians.

Dr. Bishop is heartily in favor of these meetings and in the plan to place all vaccinations and immunization in the hands of the practitioner as rapidly as possible.

If this plan is approved by the House of Delegates and the coöperation of the profession can be secured, it would result in maintaining that relationship between patient and physician which we believe to be to the best interest of all concerned.

If the House of Delegates approves these recommendations, we would suggest that the matter of providing for a Public Health Council be referred to the Committee on Public Policy and Legislation, with the request that the necessary legislation be secured at the next session of the Legislature.

We feel that the matter of the meetings proposed could be best handled by a Committee on Postgraduate Instruction, large enough to have several members from each section of the state, or by having a separate committee from each grand division of the state.

DR. W. C. DIXON, Chairman.
DR. W. P. WOOD.
DR. JOE F. GALLAGHER.
DR. R. L. SANDERS.
DR. B. S. RHEA.

The report was referred to the Committee on the Report of Committees.

The report of the State Tuberculosis Hospital Commission was called for. Dr. J. O. Manier, Chairman of the committee, stated that this committee was really the Liaison Committee between the State Society and the existing State Tuberculosis Hospital Commission. So far as is known, the State Tuberculosis Hospital Commission has not been active this year, and this committee had no occasion to function.

The report of the Committee on Hospitals was called for. In the absence of the chairman, no report was made.

The report of the Advisory Committee to the Woman's Auxiliary was called for. The chairman of this committee being absent, no report was made.

The following amendment to the Constitution, which was read at the Knoxville meeting in 1931, was brought up for consideration by Dr. H. B. Everett. The amendment is as follows:

"The fiscal year of the Association shall be January 1 to December 31."

On motion of Dr. H. B. Everett, seconded by Dr. W. B. Burns, the House unanimously adopted the amendment.

The report of the Committee on Memorial to Our President was read by Dr. H. B. Everett.

Your committee appointed by the Speaker, at the request of the Society, beg leave to submit the following resolutions:

Be it resolved by the Tennessee State Medical Association, That in the death of Dr. Robert Caldwell the Tennessee State Medical Association lost a valuable member, an honorable leader and a devoted friend.

Dr. Caldwell possessed the qualities which earned for him a high place in organized medicine. While we bow to the inevitable, we shall treasure his memory.

Be it further resolved, That a copy of these resolutions be spread on a page of the minutes of the Association and a copy furnished the members of his family.

H. B. EVERETT,
H. H. SHOULDERS,
L. T. STEM,
Committee.

The report was adopted by a rising vote.

Dr. Everett was appointed by the Speaker to report to the general session the resolution of the committee and its adoption by the House of Delegates.

The report of the Special Committee on Resolutions was made by B. S. Rhea, Chairman.

Whereas, Dr. James P. Taylor, of Wartrace, in October, 1931, met an untimely and unexpected death, causing a distinct loss to the community in which he practiced, and the Tennessee State Medical Association, which he had served as an active member and counselor;

Be it resolved, That the Tennessee State Medical Association express to his family its sincere sympathy in their bereavement and loss of father and husband; and

Be it further resolved, That this resolution be published in the State JOURNAL with the attached verse of the Association, and a copy be furnished the family of Dr. James P. Taylor.

B. S. RHEA.
Per W. C. WILLIAMS.

The good and the bad will both be said
Of the lives we have lived when we are dead,
So I would like to live as I pass along
A sermon of love for the living throng—
A life of service every day,
So as I travel along the way
I may win the victory and it may be said,
"There lies a friend," when I am dead.

A simple life, but one that counts;
A rugged road, but one that mounts
And lifts me up where I can see
The man that really is in me.
The good we give to the lives we live
And the bad we sow instead will both be known
As the seed we have sown when we sleep with the silent dead.
So I would like to give to the life I live
Every hour of service I can,
That it may be said when I am dead:
"He lived for his fellow man."

(Dedicated to my lifelong friend, Dr. J. P. Taylor. T. R. R.)

Motion was made by W. B. Burns, and seconded by H. B. Everett, that the resolution be adopted. The motion was put to a vote and carried.

Dr. Rhea proposed the following resolution:

Be it resolved, That the Secretary be instructed to wire Dr. C. N. Cowden expressing our sympathy with him in his illness and assuring him of our hope for his recovery.

The motion was regularly seconded, put to a vote and carried.

T. B. Yancey reported the serious illness of W. H. Reed, who is Vice-President from East Tennessee. He offered a resolution that Dr. Reed be wired the sympathy of the House of Delegates. Dr. Yancey's motion was seconded by H. H. Shouders, put to a vote and carried.

Reports of Councilors having been called for, the following reports were made:

Second District, S. R. Miller.

Fourth District, J. T. Moore.

Fifth District, John W. Sutton.

Sixth District, B. T. Nolen (presented by W. C. Williams).

Eighth District, A. B. Dancy.

Ninth District, E. H. Baird.

Tenth District, W. B. Burns.

Upon call by the Chairman for the report of the

Committee on Reports of Committees, W. B. Burns reported as follows:

"The report of the Medical Defense Committee is O.K., and is recommended for adoption as read. We recommend the use of the questionnaire that Dr. Miller recommends, the questionnaire to be sent out to prospective defendants."

Upon motion of R. B. Wood, and regularly seconded by H. H. Shoulders, the approval of the House was expressed ratifying the work of the committee.

The report of the Liaison Committee was discussed at great length, and was explained by the Chairman of the committee, Dr. W. C. Dixon. After careful consideration, the report was unanimously approved.

The report of the Board of Trustees was recommended for adoption on motion by R. B. Wood. Motion was seconded by H. H. Shoulders, put to a vote and carried.

The report of the Committee on Cancer was recommended for adoption. Upon motion, regularly made and seconded, the report of the Committee on Cancer was adopted.

The Speaker called for the report of the Committee on the Report of Officers.

L. T. Stem reported for this committee, commending the Secretary's report and offering no criticism. Dr. Stem called attention to the fact that the Secretary in his report pointed out the constantly diminishing balance to the credit of the Medical Defense fund.

Motion to accept the report was seconded by S. F. McIntosh, put to a vote and carried.

The report of the Committee on Resolutions was as follows:

Your committee, in considering the resolution adopted by the American Bar Association, which you referred to the committee after reconsidering same and discussing with Drs. E. W. Cocke, R. E. Lee Smith, W. S. Farmer, H. B. Brackin, T. A. Rhea and others, believe this is a step in the right direction, and that much good will be derived from a plan of this kind if details are properly carried out. We recommend that the resolution be adopted with the proviso that the legislative committee of this Society being instructed to work with the committee from the Tennessee Bar Association to formulate plans for the carrying the provisions that are outlined out. Respectfully submitted,

H. B. EVERETT.
J. H. REVINGTON.
S. S. MOODY.

Dr. Everett, Chairman of the committee, moved the adoption of the report. The motion was seconded, put to a vote and carried.

The committee, in considering the resolution of Dr. J. A. McIntosh, referring to Medical Coroners, beg to report we do not believe that it would be wise that only Medical Coroners be appointed, but that Coroners be provided with medical advisor.

H. B. EVERETT.
J. H. REVINGTON.
S. S. MOODY.

Dr. Everett moved the adoption of the report. The motion, after being seconded, was put to a vote and carried.

Election of Councilors was held at the time provided for (Wednesday morning) in the Constitution.

Upon nomination by S. F. McIntosh, T. B. Yancey's name was put before the House. Battle Malone moved that the nominations be closed. Motion seconded, put to a vote and carried. The Secretary cast the vote of the Society for Dr. Yancey as Councilor for the First District.

Ralph Monger nominated J. H. Revington for Councilor of the Third District.

Nomination was seconded and motion made, seconded and carried that the nominations be closed, and that the Secretary cast the ballot of the House for Dr. Revington.

S. S. Moody nominated John W. Sutton for Councilor of the Fifth District. S. F. McIntosh, after the nomination had been regularly seconded, moved that the nominations be closed and that the Secretary cast the unanimous ballot. Motion was seconded, put to a vote and carried. Dr. Sutton was declared elected.

W. C. Williams nominated B. T. Nolan for reelection as Councilor of the Seventh District. There being no other nominations, the Speaker declared nominations closed and instructed the Secretary to cast the vote.

L. T. Stem nominated E. H. Baird to succeed himself as Councilor of the Ninth District.

S. S. Moody moved that the nominations be closed. Motion was seconded, voted on and carried. The Secretary cast the ballot.

In accordance with the provisions of the Constitution, the report of the Nominating Committee was the first order of business Thursday morning.

T. B. Yancey read the report as follows:

For President:

W. P. Wood, Knoxville;.
Lee Smith, Bearden.
J. A. McCulloch, Maryville.

(Upon second ballot, Dr. Wood received a majority of the votes and was declared elected by the Speaker.)

For Vice-Presidents:

East Tennessee: Wm. Dulaney Anderson, Chattanooga.
Middle Tennessee: J. T. Moore, Algood.
West Tennessee: E. W. Cocke, Bolivar.

(The Speaker called for nominations from the floor, but none were made. Upon motion, duly seconded and carried, the nominations were closed and the vote of the House was cast by the Secretary for each of the above Vice-Presidents.)

For Secretary:

H. H. Shoulders, Nashville.

(No other nominations being made, R. B. Wood moved and Ralph Monger seconded the motion to the effect that the Speaker cast the ballot of the House. The motion was put to the House and carried.)

For Trustee of East Tennessee:

Ralph Monger, Knoxville.

(No other name being offered, S. F. McIntosh moved that the nominations be closed. Motion seconded and carried. Dr. Stem moved that the Secretary cast the entire ballot for Dr. Monger. Motion seconded, voted upon and carried.)

For Delegate to the A. M. A.:

H. H. Shoulders, Nashville.

For Alternate to A. M. A.:

M. M. Cullom, Nashville.

(No other names being offered in nomination for either Delegate or Alternate, L. T. Stem moved that the nominations be closed and that the Speaker cast the ballot for both. Motion seconded by H. B. Everett, put to a vote and carried. Drs. Shoulders and Cullom were declared elected by the Speaker.)

For Speaker of the House:

E. R. Zemp, Knoxville.
George C. Williamson, Columbia.

(No other nominations being made, the Secretary called for a vote of the House, result of which was the election of Dr. Zemp.)

The following communication was received from the Section on Eye, Ear, Nose and Throat:

> The Section of Eye, Ear, Nose and Throat have disbanded the section with the intention of forming a new organization separate from the State Medical Society. This is done in order that we may be able to give more attention to the general session, and also to form a new organization which we think will be of more interest to both. We trust this will meet the approval of the House of Delegates.
>
> R. G. REAVES, Chairman.

No action was taken upon this communication.

At one session there was considerable discussion of the legal rights of osteopaths, chiropractors, etc., to prescribe drugs. No action was taken by the House of Delegates. Those taking part in the discussion were W. C. Sanford, of Bradley County, the Speaker, the Secretary, L. T. Stem, F. L. Roberts, S. R. Miller and John L. Jelks. No action was taken by the House.

J. L. Cottrell, of Elizabethton, called attention of the Association to the apparent injustice of railroads in granting attorneys passes over the entire system while surgeons were limited to division passes. No action was taken by the House.

After the annual meeting of the Council was held, this report was made to the House of Delegates:

REPORT OF THE COUNCIL OF THE TENNESSEE STATE MEDICAL ASSOCIATION TO THE HOUSE OF DELEGATES

Through the Councilor of the Fifth District and the delegate and alternate from the Rutherford County Medical Society, it has been learned that said society is not functioning in scientific work, and had only one meeting each in 1931 and 1932, but the Stone River Academy of Medicine has been functioning regularly and has scientific meetings each month with good scientific programs, and attendance of fourteen average last year.

This Stone River Academy desires a charter.

The Councilor has tried to harmonize matters in the Rutherford County Society for the last five or six years, but without success.

The Council therefore recommends to the House of Delegates that the Rutherford County Medical Society's charter be recalled. It also recommends that a charter be issued to the group constituting the active Academy upon their petition for a charter.

S. R. MILLER, Chairman.

E. H. BAIRD, Secretary.
Memphis, Tenn., April 13, 1932.

On motion of Dr. Burns, who presented the report, seconded by Dr. Monger, the action of the Council was unanimously approved.

After careful consideration, the Secretary's motion for the creation of a "postgraduate committee," as recommended by the Liaison Committee, was unanimously carried. This committee is to be appointed by the President of the Association and shall be composed of representatives from each grand division of the state.

FINAL REPORTS OF COMMITTEE ON THE COSTS OF MEDICAL CARE

FIVE years of work by the fifty members and research staff of the Committee on the Costs of Medical Care have culminated in this final report, entitled "Medical Care for the American People." The majority report was favored by the following:

Private Practice. — Lewellys F. Barker, M.D.; Walter P. Bowers, M.D.; J. Shelton Horsley, M.D.; Stewart R. Roberts, M.D.; Richard M. Smith, M.D.; Walter R. Steiner, M.D., and Rollin T. Woodyatt, M.D.

Institutions and Special Interests. — W. Irving Clark, M.D.; William Darrach, M.D.; Louis I. Dublin, Ph.D.; Elizabeth Fox, R.N.; Ambrose Hunsberger, Phar.M.; Alfred Owre, D.M.D., M.D.; W. S. Rankin, M.D.; Mary M. Roberts, R.N.; Alphonse M. Schwitalla, Ph.D., and Winford H. Smith, M.D.

Public Health. — George H. Bigelow, M.D.; Herman N. Bundesen, M.D.; Haven Emerson, M.D.; John Sundwall, M.D., and C. E. A. Winslow, Dr.P.H.

Social Sciences. — Michael M. Davis, Ph.D.; William T. Foster, Ph.D.; Wesley C. Mitchell, Ph.D.; William F. Ogburn, Ph.D., and Henry C. Taylor, Ph.D.

The Public.—Winthrop W. Aldrich; Morris L. Cooke, D.Sc.; Mrs. William Kinnicutt Draper; Homer Folk, LL.D.; John P. Frey; Mrs. Walter McNab Miller; William J. Schieffelin, Ph.D.; Amelia Sears, and Ray Lyman Wilbur, M.D.

A summary of the majority report follows:

I

"The Committee recommends that medical service, both preventive and therapeutic, should be furnished largely by organized groups of physicians, dentists, nurses, pharmacists and other associated personnel. Such groups should be organized, preferably around a hospital, for rendering complete home, office and hospital care. The form of organization should encourage the maintenance of high standards and the development or preservation of a personal relation between patient and physician.

II

"The Committee recommends the extension of all basic public health services—whether provided by governmental or nongovernmental agencies — so that they will be available to the entire population according to its needs. This extension requires primarily increased financial support for official health departments and full-time trained health officers and members of their staffs whose tenure is dependent only on professional and administrative competence.

III

"The Committee recommends that the costs of medical care be placed on a group payment basis, through the use of insurance, through the use of taxation, or through the use of both these methods. This is not meant to preclude the continuation of medical service provided on an individual fee basis for those who prefer the present method. Cash benefits, i. e., compensation for wage-loss due to illness, if and when provided, should be separate and distinct from medical services.

IV

"The Committee recommends that the study, evaluation and coordination of medical service be considered important functions for every state and local community, that agencies be formed to exercise these functions, and that the coordination of rural with urban services receive special attention.

V

"The Committee makes the following recommendations in the field of professional education: (A) That the training of physicians give increasing emphasis to the teaching of health and the prevention of disease; that more effective efforts be made to provide trained health offi-

> cers; that the social aspects of medical practice be given greater attention; that specialties be restricted to those specially qualified; and that postgraduate educational opportunities be increased; (B) that dental students be given a broader educational background; (C) that pharmaceutical education place more stress on the pharmacist's responsibilities and opportunities for public service; (D) that nursing education be thoroughly remolded to provide well educated and well qualified registered nurses; (E) that less thoroughly trained but competent nursing aides and attendants be provided; (F) that adequate training for nurse-midwives be provided, and (G) that opportunities be offered for the systematic training of hospital and clinic administrators."

The first chapter surveys "The Present Status of Medical Care." It reports that 177,000 physicians and dentists, with some 900,000 others at an annual expense of $3,647,000,000, so distribute their services that those in the lower income groups, while suffering as much or more sickness, receive far less medical service than those with a greater income.

There is a lack of preventive health care; indeed, "niggardly appropriations for public health work." The burden of sickness cannot be measured by averages, because of the extreme unevenness with which it is distributed. Fifty per cent of the families in the United States have incomes of less than $2,000, which means that "even less-than-average charges for medical service, therefore, are more than many of our families can bear."

One conclusion reads: *"Certainly no solution to the problems of medical costs can be reached through a reduction in the average of professional incomes"* (italics in original). This average is none too high now to attract a high type of practitioner and permit progress through graduate training and study.

The Committee attempts from the report of some of these investigations to calculate the cost of complete medical care and concludes that "all needed medical care of the kind which people customarily purchase individually could be provided in urban regions at least, at a cost, excluding capital charges, of $20 to $40 per capita per annum."

The second chapter discusses "The Essentials of a Satisfactory Medical Program." Six basic essentials are enumerated:

> "1. The plan must safeguard the quality of medical service and preserve the essential personal relationship between patient and physician.
>
> "2. It must provide for the future development of preventive and curative services in such kinds and amounts as will meet the needs of substantially all the people and not merely their present effective demands.
>
> "3. It must provide services on financial terms which the people can and will meet, without undue hardship, through either individual or collective resources.
>
> "4. There should be a full application of existing knowledge to the prevention of disease, so that all medical practice will be permeated with the concept of prevention. The program must include, therefore, not only medical care of the individual and the family but also a well organized and adequately supported public health program.[1]
>
> "5. The basic plan should include provisions for assisting and guiding patients in the selection of competent practitioners and suitable facilities for medical care.
>
> "6. Adequate and assured payment must be provided to the individuals and agencies which furnish the care."

Having set up these standards, the Majority Report selects three lines of approach to the solution of its problem:

> "(*a*) The development of types of organized or group practice that will more effectively and economically meet the community's medical needs.
>
> "(*b*) The distribution, over a period of time and over a group of families or individuals, of the costs of service.

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[1] The term "public health program" is meant to include the work of the official health departments and of voluntary health agencies.

> "(*c*) Provision for the planning and coordination, on a local and regional basis, of all health and medical services."

It is evident that the program of the Majority Report centers around "provision of service through organized groups." The groups studied on which conclusions are based covered only fifty such groups; conclusions as to the financial operation of such clinics and especially as to their net and gross income are based on the information furnished by twenty-seven such clinics.

The Majority Report sets up "standards" for group practice and among these emphasizes the statement that *"lay groups organized for profit have no legitimate place in the provision of this vital public service"* (italics in original). This standard, the Committee seems to fail to note, would eliminate many of the examples of group practice on which it depends for the argument previously mentioned leading to the estimate of annual cost.

"Inevitably the Committee has been led to the conclusion that the costs of medical care should be distributed over groups of people and over periods of time." This leads to the adoption of insurance as a major recommendation. The participation of insurance companies is rejected and taxation accepted only in a secondary form. Having eliminated these, the Majority Report is brought to the somewhat indefinite conclusions that "there should, therefore, be an agency in each community through which the lay and the professional groups concerned in providing and financing medical services could consult, plan and act in behalf of the best provision of medical resources which the community can afford." The character of this "agency" remains indefinite throughout the report.

Chapter three sets up "An Ultimate Objective in the Organization of Medicine." "The keystone of the concept of a satisfactory medical service for the nation is the development of one or more non-profit 'community medical centers' in every city of approximately 15,000 population or more." Then follows a description of such an imaginary center. The Majority Report passes lightly over such questions as the possibility of the redistribution of great medical centers that have been established in most large cities for educational, political, financial or other purposes which render them ill adjusted to fit into such a program.

It assumes that existing hospital organizations can be so transformed but offers little information as to the methods by which this change may be brought about. There is much talk of "coordination and control of services" but there is no definite statement as to what is to constitute this important factor in the program.

Chapter four considers "Plans and Experiments Now Under Way" and lists twenty-five such experiments. Four of these are "under professional sponsorship"; four "under consumer sponsorship"; thirteen are listed as "under community sponsorship with professional participation"; one "under joint sponsorship of professional and consumer groups," and three "under commercial sponsorship." All of these are treated without the specific criticisms necessary to inspection of the foundation stones on which the structure of the national medical service is to be erected.

The Committee concludes that:

> "These twenty-five types of development in the United States and the many developments abroad show a ferment at work in medical practice which contains great possibilities for good and evil. The Committee is aware of the fact that some of the plans are mere attempts to capitalize for private gain the people's need for better medical service. It is equally aware of the dangers inherent in other plans. Each should be viewed as an experiment and subjected to the careful evaluation that is given in a scientific laboratory. Some of them appear to the Committee to be very promising."

The fifth chapter includes "The Recommendations of the Committee" previously here quoted. The somewhat vague character of the report is excused by the statement that "the committee believes that its obligations require it to think ahead for twenty or thirty years, as well as for the next five or ten years and to present distant as well as immediate goals."

The Committee's first recommendation that medical service "should be furnished largely by organized groups of physicians, dentists" and so on does not take account of the fact that these groups are already professionally organized in their own associations. Indeed, the existence of these professional associations is almost entirely ignored in the Majority Report.

"The Committee's most fundamental specific proposal is the development of suitable hospitals into comprehensive community medical centers."

Industrial medical service is cited as another step toward the realization of this recommendation, and the Majority Report suggests "that free choice of practitioners should be allowed insofar as practicable."

University medical service is also to be fitted into this scheme. "In 'College towns' it may frequently be feasible to expand the university medical service into a community medical center which serves townspeople as well as students."

The Majority Report recognizes the necessity of measures to maintain the quality of medical service in groups; no recommendations are made concerning relationships with professional associations, the most important bodies for maintaining standards.

The recommendation which will undoubtedly attract the most attention is that "the costs of medical care be placed on a group payment basis, through the use of insurance." The discussion is extremely indefinite. The comments interspersed clearly reflect sharp divisions of opinion in the Committee.

It is suggested that "a state medical society might initiate and standardize the organization of group practice in local areas and serve as a negotiating or mediating body in making the arrangements for group payment." On the whole, however, the Majority Report seems to incline to a voluntary insurance scheme with subsidies from taxation. . .

There is also the conclusion that making "individual practice and not group practice the logical foundation of the whole system . . . has been one of the chief disadvantages which European countries have faced under compulsory insurance." Examples or evidence in support of this conclusion are not made available.

The Majority Report persistently emphasizes the importance of groups; it looks on insurance "as the most effective possible stimulant to the formation of such groups." It is hard to determine whether the groups are to be the basis or the objective of the program.

Confronted with the problem of the "control of competition," which has hitherto evidently produced deterioration in most of the schemes of contract practice which are discussed, the Majority Report proposes the following devices for its control:

> "(*a*) Provision of medical service in increasing proportions by organized nonprofit groups with community backing and control.
>
> "(*b*) State regulation of the finances to assure actuarial soundness.
>
> "(*c*) The formulation of general standards and policies, the regulation of charges, and the arbitration of difficulties by the state medical and dental societies or by an officially appointed medical board nominated in large part by the societies."

The Majority Report urges a study by professional groups with lay participants as a preliminary to the installation of any program.

In the final chapter, "The Challenge of the Future," appears recognition of the place of such professional associations. The report says:

> "The cooperation of the professional groups in community or state leadership is essential. Their stake in these issues is very large; their interest in continuing. They should instigate as well as guide. The crucial point in the generalship of the forces at work is, perhaps, the development of a proper relation between the professional and the lay groups. The public should recognize the central place of the professional groups in determining standards and methods. The professions should recognize their ultimate responsi-

bilities to the public. The control of undesirable commercial enterprises in this field will depend largely on the watchfulness of the professional bodies, on their ability to enlist lay cooperation, and on the development of sound and successfully operating non-commercial plans.

"Continued study of the complex problems of medical economics is of the first importance. The Committee's investigations have opened a way. Fortunately, professional societies are establishing bureaus and committees on medical economics. Because a university has the unique advantage of having both medical and social scientists in one organization, the Committee has formally recommended to the universities of the country that they conduct research in this field."

Minority Reports

Two minority reports and two statements constitute the views of those members of the committee who found themselves in conflict with the general tone or trend of the majority report.

FIRST MINORITY REPORT

The first minority report, which was signed by A. Christie, M.D., George E. Follansbee, M.D., M. L. Harris, M.D., Kirby S. Howlett, M.D., A. C. Morgan, M.D., Olin West, M.D., Robert Wilson, M.D., and N. B. Van Etten, M.D., draws attention to the failure of the Committee to show by facts that "organization" can accomplish what is claimed for it in the majority report. There is nothing in the experience of the medical profession to show that the "Community Medical Center" is a workable scheme or that it would not contain evils of its own which might be worse than the evils it is supposed to alleviate. This Medical Center Plan is suggestive of the great mergers in industry in which mass production and centralized control are the principal features. It apparently disregards the fundamentals which make medicine a personal service and which require that the individual patient and not diseases or economic classes or groups be the object of medical care.

The objections to the Medical Center Plan are summarized as follows:

1. It would establish a medical hierarchy in every community to dictate who might practice medicine there.
2. It would be impossible to prevent competition among the many such centers necessary for large cities; cost would inevitably be increased by the organization necessary to assign patients to the various centers. This would add to the evils of medical dictatorship those of a new bureau in the local government with its attendant cost.
3. Continuous personal relationship of physician and patient would be difficult if not impossible under such conditions.

In the opinion of this minority group, the question of "Industrial Medical Service" has not been adequately or fairly dealt with in the majority report. For each of the favorable reports published (publications Nos. 5, 18, and 20) many instances could be cited wherein the results of industrial medical services have been exceedingly unfavorable. It is pointed out that in industrial medical services, mutual benefit associations, so-called health and hospital associations, and other forms of contract practice, no means have been found to prevent destructive competition between individuals or groups concerned with these movements. The studies published by the Committee show only the favorable aspects. They were selected because they were considered the most favorable examples of this type of practice in the United States. For each of these plans a score of the opposite kind can be found.

Utilization of subsidiary personnel is nothing new in medical practice. Already there is constant temptation in many fields to permit technicians to perform duties entirely unjustified by their knowledge and training. The minority expresses a word of caution relative to the dangers involved in permitting non-medical technicians to assume the duties which only physicians should undertake.

The Committee's first recommendation that medical service "should be furnished largely by organized groups of physicians, dentists" and so on is apparently predicated on the Committee's study on "Private Group Clinics." This minority group believes that the establishment of such clinics is in line of progress when they are a natural outgrowth of local conditions, but the studies published by the Committee, in the opinion of the minority, were far too few in number to constitute a safe base on which to erect so large and revolutionary a structure as is proposed. The majority report fails to consider the fact that multiplication of clinics or groups in large communities results in duplication of expensive equipment far beyond the needs of the community. Such a multiplication of medical facilities, instead of reducing overhead and the costs of medical care to the community, adds to this cost through the duplication of plants. It is significant to note that the overhead in private medical practice averages only about 2 per cent higher than for medical groups in the lower brackets of gross income. As the gross income rises, the ratio of overhead becomes progressively less significant.

Other disadvantages of group practice are: restriction of freedom of action in respect to vacations, study, travel, attendance on scientific meetings and even publication of medical articles to all members except the heads of the group; comparatively static income of members of a group except that of the owner or owners; salary cuts, then discharge of employees to reduce overhead in times of depression; disruption of groups through death or disability of some able man or men around whom the group has been built, and the difficulty with which physicians are able to find employment in another group or are able to enter private practice when a group closes.

In spite of the extensive data available on the insurance systems of Europe and the evidence which can be produced to show that voluntary health insurance schemes have everywhere failed, the majority of the Committee makes the definite recommendation that this country adopt the thoroughly discredited method of voluntary insurance. A system of voluntary health insurance tied to the visionary medical center plan, which is offered as the "keystone" of all medical service, would plunge the medical profession into similar or more difficult problems than have been experienced by the European professions in its struggle against the various European insurance schemes. In the United States, contract practice is essentially health insurance and has already given rise to destructive competition among professional groups, inferior medical service, loss of personal relationship of patient and physician, and demoralization of the profession. It is clear that all such schemes are contrary to sound public policy and that the shortest road to commercialism of the practice of medicine is through the supposedly rosy path of insurance.

The objections to compulsory health insurance are almost as compelling to this minority group as are those to voluntary insurance. Proof of the evils of the compulsory system is at hand in our own experience in this country with the only compulsory system with which we have yet had to deal, workmen's compensation insurance. Under workmen's compensation, groups are soliciting contracts, often through paid lay promoters; laymen are organizing clinics and hiring doctors to do the work; standards of practice are being lowered; able physicians outside the groups are being pushed to the wall; the patient is forced by his employer to go to a certain clinic, and the physician is largely under the control of the insurance companies. These are not visionary fears of what may happen but a true picture of widespread evils attending insurance practice. No better example should be needed of what must happen to medical care if compulsory insurance is extended to families.

The total cost of medical care is usually increased when it is paid for through insurance, because the cost of operation of the insurance plan must be added to the cost of medical care and the number of persons sick and the number of days' sickness per capita always increase under any insurance system. The Majority Report registers approval of insurance but disapproves of insurance companies. The minority group agrees with the principal that, in any contract practice plan involving an insurance principle, this principle should be applied through a nonprofit organization. The minority group has not attempted to marshal all the facts or arguments that can be used against health insurance but has endeavored to show that there are great dangers and evils in insurance practice which must be set over against the advantages of distributing the costs of medical care by this method. The minority group believes that the majority report has minimized these dangers and evils.

The minority recommendations follow:

"I. The minority recommends that government competition in the practice of medicine be discontinued and that its activities be restricted (*a*) to the care of the indigent and of those patients with diseases which can be cared for only in governmental institutions; (*b*) to the promotion of public health; (*c*) to the support of the medical departments of the Army and Navy, Coast and Geodetic Survey, and other government services which cannot because of their nature or location be served by the general medical profession; and (*d*) to the care of veterans suffering from bona fide service-connected disabilities and diseases, except in the case of tuberculosis and nervous and mental diseases.

"II. The minority recommends that government care of the indigent be expanded with the ultimate object of relieving the medical profession of this burden.

"III. The minority joins with the Committee in recommending that the study, evaluation and coordination of medical service be considered important functions for every state and local community, that agencies be formed to exercise these functions, and that the coordination of rural with urban services receive special attention.

"IV. The minority recommends that united attempts be made to restore the general practitioner to the central place in medical practice.

"V. The minority recommends that the corporate practice of medicine, financed through intermediary agencies, be vigorously and persistently opposed as being economically wasteful, inimical to a continued and sustained high quality of medical care, or unfair exploitation of the medical profession.

"VI. The minority recommends that methods be given careful trial which can rightly be fitted into our present institutions and agencies without interfering the fundamentals of medical practice.

"VII. The minority recommends the development by state or county medical societies of plans for medical care."

SAFEGUARDS IN DISTRIBUTION OF MEDICAL COSTS

This minority group agrees that any plan for the distribution of medical costs must have the following safeguards:

1. It must be under the control of the medical profession. (A "Grievance Board" to settle disputes, having lay representation, is permissible and desirable.)
2. It must guarantee not only nominal but actual free choice of physician.
3. It must include all, or a large majority of, the members of the county medical society.
4. The funds must be administered on a nonprofit basis.
5. It should provide for direct payment by the patient of a certain minimum amount, the common fund providing only that portion beyond the patient's means.
6. It should make adequate provision for community care of the indigent.
7. It must be entirely separate from any plan providing for cash benefits.

COUNTY SOCIETY PLANS FOR MEDICAL CARE

The minority group states its reasons for favoring thorough trial of the county society plan for furnishing complete medical care as follows:

1. It places responsibility for the medical care of the entire community on the organized physicians of the community.
2. It places medical care under the control of the organized profession instead of in the hands of lay corporations, insurance companies, and so on.
3. It places responsibility for the quality

of service directly on the organized profession. It is in fact the only plan that guarantees quality of service and makes it the only basis of competition.

4. It removes the possibility of unethical competition because it includes all the physicians of the community and fixes a fee schedule.

5. Solicitation of patients, underbidding for contracts and other evils of the usual insurance plans are eliminated.

6. Freedom of choice of physician is assured and the essential personal relationship of physician and patient is thereby preserved.

7. It is the only plan that includes all classes, from the indigent to the wealthy.

8. It is adaptable to every locality, both urban and rural.

9. It provides for a minimum cost of administration by operating on a nonprofit basis.

10. It provides for payment, by every patient with income, of a certain minimum amount before the insurance is in operation. The minimum rises with the patient's income. This provision alone will operate to avoid many abuses in all other types of insurance practice.

11. It provides for means of certification of disability separate from the attending physician.

12. Cash benefits do not form a part of the plan.

SECOND MINORITY REPORT

The second minority report, which was signed by Herbert E. Phillips, D.D.S., and C. E. Rudolph, D.D.S., is in agreement with the first minority report in strongly emphasizing the necessity of maintaining professional standards and the position of the general practitioner. This group agrees with the first minority group that the majority is unduly critical of the professions. The second minority group joins with the first in declaring the medical center plan of the majority a Utopian concept involving many problems too visionary or problematic to justify inclusion in an authoritative report of this kind.

The second minority group believes that the method of payment for medical service need not interfere with the highest professional standard or the close personal relations between practitioner and patient. Furthermore, this group is of the opinion that the introduction of compulsory health insurance under professional control would eliminate the objectionable features. It is in accord with the first minority group on the development by state or county medical society of plans for medical care.

The statements of Edgar Sydenstricker and Walton H. Hamilton are largely criticisms of the methods used by the Committee. They are of the opinion that the preliminary studies and the recommendation do not deal adequately with the fundamental economic questions which the Committee was formed primarily to study and consider.

THE INCREASING USEFULNESS OF BALANCED ANESTHESIA*

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THE TERM "balanced anesthesia" was introduced in 1926 for the purpose of indicating results following the use of safe doses of several anesthetic agents and hypnotics as contrasted with the use of a large single dose of one agent, particularly for patients who are bad risks. In the six years which have elapsed there is a noticeable tendency toward the adoption of this principle in the induction of anesthesia. The newly introduced anesthetic agents and certain methods of inducing anesthesia have made this trend more pronounced. Such agents as sodium iso-amylethyl barbituric acid (sodium amytal), sodium ethyl (1-methyl butyl) barbituric acid (pentobarbital sodium or nembutal), and tribromethyl alcohol (avertin) were introduced with the hope that they would by themselves produce safe and satisfactory anesthesia. Since doses of these agents, sufficiently large to produce anesthesia, were proved to be sometimes unsafe, the agents were given in doses small enough to produce desirable effects without untoward results. This, then, satisfied the requirements of a balanced anesthesia since additional agents were used in small amounts to bring about the desired state of anesthesia.

Of the new methods of anesthesia, that of Magill has been one of the most beneficial. He suggested substituting for the old method of using a small intratracheal tube and insufflating the anesthetic agent an intratracheal tube large enough to accomplish anesthesia by inhalation. In this manner he has solved many of the problems of general anesthesia, especially in cases in which good results would have been difficult to obtain otherwise.

In carrying out balanced anesthesia one must consider the pharmacologic effects of the various agents at hand, and the difficulty of modifying these effects. Other effects produced by these agents can be modified; I have, therefore, grouped them separately. Table 1 shows the pharmacologic effect of certain agents on the average patient for ordinary surgical procedures. The requirements of the operation can usually be met by more than one combination of agents or methods and further choice may be made considering the physical condition of the patient and the advisability of using or eliminating from consideration agents and methods that, based on experience, have been more or less desirable than others. In table 2 is indicated the relation of certain agents and methods to certain diseases or areas of disease, based on my experience. An examination of these tables will show that balanced anesthesia is exceptionally usable, owing to the fact that preliminary medication is seldom contra-indicated; that local and regional methods of anesthesia are seldom contra-indicated, and that most general anesthetics may be given with relative safety if the dose and concentration are small enough. After an agent has been chosen, both from the standpoint of pharmacologic effect and the patient's disease, the most important further consideration is the availability of the chosen agent or agents and method. This is largely dependent on the experience of the anesthetist or of the anesthetist and surgeon, and if experience is lacking with a given agent and method, the choice may be still further restricted. The patient's attitude toward the method must also be considered. If there is a choice it is often well to permit the patient to indicate his preference and frequently his co-operation is thereby obtained.

In general, it may be said that a routine of inducing anesthesia is carried on often less safely than when a careful choice is made; therefore many agents and methods should be kept available. However, if a routine method is to be decided on, good results can usually be obtained with some form of balanced anesthesia. The term balanced anesthesia is very flexible and is applicable to many combinations of anesthetics. However, it can seldom be applied when a profound effect from any one anesthetic agent has been produced. This is particularly applicable to the occasional use and abuse of giving drugs in large doses as preliminary medication.

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*Read before the Chattanooga and Hamilton County Medical Society, Chattanooga, Tennessee, May 5, 1932.

Table I

DESIRED PHARMACOLOGIC EFFECTS OF MOST COMMONLY USED ANESTHETIC AGENTS.

	Block*	Infiltration*	Spinal **	Inhalation and insufflation		Barbiturates ***	Avertin***	Combined or balanced anesthesia*
				Drop ether**	Gases** (with or without ether)			
Anesthesia	Yes	No	Yes	Yes	Yes	No	No	Yes
Analgesia	No	Yes	Yes	No	Yes	Yes	Yes	No
Relaxation	Yes	No	Yes	Yes	No	No	No	Yes
Quiet respiration	Yes	No	Yes	No****	No****	Yes	Yes	Yes
Prompt recovery of reflexes ...	Yes	Yes	Yes	No	Yes	No	No	Yes
Untoward immediate results ..	No	No	Yes	No	No	No	No	No
Untoward remote results	No	No	?	Yes	No	Yes	Yes	No

*Definite effect from preliminary medication.
**Mild effect from preliminary medication.
***Mild effect from preliminary medication; used intravenously or rectally as a basic anesthetic.
****With intratracheal anesthesia, yes.

Table II

SAFETY OF VARIOUS ANESTHETIC AGENTS AND METHODS IN RELATION TO PHYSICAL CONDITION OF PATIENT AND SOME COMMON DISEASES FOR WHICH OPERATION IS PERFORMED.

Physical condition of patient, complicating disease, or organs operated on	Drop ether	Gases*	Barbiturates**	Avertin**	Spinal	Block	Infiltration	Combined or balanced anesthesia
Very young, four years or less:								
Fair or good condition	Yes	Yes	No	No	No	No	Yes	Yes
General debility	No	Yes	No	No	No	No	Yes	Yes
Very old, seventy-five years or more:								
Fair or good condition	No	Yes	No	No	No	Yes	Yes	Yes
General debility	No	Yes	No	No	No	No	Yes	Yes
Pulmonary disease:								
Fair or good condition	No	Yes	No	No	Yes	Yes	Yes	Yes
General debility	No	Yes	No	No	No	Yes	Yes	Yes
Marked cardiac disease:								
Fair or good condition	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes
General debility	No	Yes	No	No	No	Yes	Yes	Yes
Diabetes:								
Fair or good condition	No	Yes	Yes	No	Yes	Yes	Yes	Yes
General debility	No	Yes	No	No	No	Yes	Yes	Yes
Marked vascular disease:								
Fair or good condition	Yes	Yes	Yes	Yes	?	Yes	Yes	Yes
General debility	No	Yes	No	No	No	Yes	Yes	Yes
Diseases of colon, exclusive of obstruction***:								
Fair or good condition	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes
General debility	No	Yes	No	No	No	Yes	Yes	Yes

Physical condition of patient, complicating disease, or organs operated on	Drop ether	Gases*	Barbiturates**	Avertin**	Spinal	Block	Infiltration	Combined or balanced anesthesia
Intestinal obstruction:								
Fair or good condition	No	Yes	No	No	Yes	Yes	Yes	Yes
General debility	No	Yes	No	No	No	Yes	Yes	Yes
Kidney:								
Fair or good condition	No	Yes	No	No	Yes	Yes	Yes	Yes
General debility	No	Yes	No	No	No	Yes	Yes	Yes
Genito-urinary tract:								
Fair or good condition	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
General debility	No	Yes	No	No	No	Yes	Yes	Yes
Stomach:								
Fair or good condition	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes
General debility	No	Yes	No	No	No	Yes	Yes	Yes
Liver, gallbladder, or bile ducts:								
Fair or good condition	Yes	Yes	No	No	?	Yes	Yes	Yes
General debility	Yes	Yes	No	No	No	Yes	Yes	Yes
Appendix:								
Fair or good condition	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes
General debility	No	Yes	No	No	No	Yes	Yes	Yes
Goiter:								
Fair or good condition	No	Yes	Yes	No	No	No	Yes	Yes
General debility	No	Yes	No	No	No	No	Yes	Yes

*Either nitrous oxide or ethylene, depending on whether one must avoid an inflammable gas, and with or without ether.

**Used intravenously or rectally as a basic anesthetic.

***Anesthesia for surgical procedures on the intestines is considered in another publication.

SURGERY OF THE SYMPATHETIC NERVOUS SYSTEM IN THE UPPER AND LOWER EXTREMITIES*

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OPERATIVE attack upon the sympathetic nerves and ganglia has been made sporadically and empirically for many years. The diseases for which it was undertaken are quite numerous. In many of them the chief value of the work done was to demonstrate its uselessness. An example of such failure is epilepsy in which failure was signal. This was purely empirical and must be because animal experimentation could so far as is known be of no service. Besides, the operation was done in the hope of increasing the cerebral circulation when it was not known that epilepsy depended upon or was even influenced by cerebral anemia. There were enough successes in other lesions to establish the occasional usefulness of such operations; an example of which was the benefit to angina pectoris. No great progress was made in this branch of surgery until within the past ten years, for which Hunter and Royle of Australia and Leriche of Alsace-Loraine were chiefly responsible. The immense amount of work done in the last eight years and still under way on the anatomy, physiology and surgery of the sympathetic nervous system necessitates that every one especially interested in the progress of medicine should know something at least of the lesions which are being relieved and the extent and duration of the relief as well as the dangers and complications arising from operations in this new field. It is also necessary to know the method of selection of cases in such manner as to avoid operation on cases belonging to an amenable group, but already so far advanced that restoration is impossible. As illustrations, two conditions may be considered; one is angina pectoris: if the heart or its vessels are in a hopeless condition of deterioration manifestly there can be no justification in undertaking a difficult and serious procedure for the relief of pain which cannot continue long on account of these changes: if Raymaud's disease has advanced to the state of definite gangrene no operative measure can restore life to the dead tissue, whatever justification may be found for its performance to arrest the progress of the disease in the remaining tissues.

Present incomplete knowledge of the paths of impulses in the sympathetic makes it impossible to know just how much surgery is necessary for relief in certain conditions, or how much can be done without endangering life or useful function. Still some of the most beneficial results have been accomplished where the paths of conduction are not known, namely in periarterial sympathectomy, the chief knowledge about which is that there can be demonstrated no evidence of long trunk nerves along the arteries the stripping of whose sheaths causes an increased supply of blood in the artery's distribution. Leriche supposed that the operation interrupted the course of these imaginary nerves.

The operative attack on the sympathetic system consists in removal of ganglia, resection of sympathetic cords, ramisection or severance of the rami communicantes, and periarterial sympathectomy or the removal of tunica adventitia of the main artery supplying the diseased region, although it is not known just what causes the resultant hyperemia. In other words, when one does periarterial sympathectomy it is not known what the essential thing is, for other traumatizing action on the part may cause a similar result.

This discussion is restricted to the lesions of the extremities which may be relieved by operations on the sympathetic nervous system, on account of lack of time to discuss them all and not because there is lack of benefit or fascinating drama in the relief of such conditions as angina pectoris and asthma in the chest or megacolon and retention of urine in the bladder because of a disproportion between the tonus of the bladder muscle and that of the sphincter vesicae.

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*Presidential address, read before the Middle Tennessee Medical Association, November 17, 18, 1932, Columbia, Tenn.

The following lesions of the extremities have been subjected to sympathectomy: senile gangrene, Raynaud's disease, arthritis, thrombo-arteritis obliteraus, ulcers of the leg, indolent and trophic, such as mal perforans pedis, spastic paralysis, erythromelalgia, delayed union and non-union of fractures, hyperidrosis and scleroderma. It is fair to mention that most of these conditions have been largely hopeless for cure by all our known plans of treatment while the remaining were only partially curable or subject to annoying recurrence and all of them freighted with an undue amount of worry for the physician who assumed responsibility for their treatment.

It was stated above that selection of cases for this plan of treatment must be carefully made. The plan contemplates increase of the circulation of the part by withdrawing vasoconstrictor influence. If the vessels are in such condition that they cannot dilate when this influence is destroyed, obviously the treatment can do no good. It is therefore necessary, particularly in certain types of cases, to be able to separate the eligible from the ineligible. This can be done by therapeutic tests which are capable of raising the temperature of the extremity sufficiently to assure one of the ability of the vessels to dilate under a vasoconstrictor inhibition. If no such rise of temperature can be gotten by these agents, no operation is indicated. Typhoid vaccine is in common use for this purpose. The dosage varies. Smithwick recommends fifty to two hundred and fifty million typhoid bacilli intravenously. He has abandoned this practice in individuals who are more than fifty years old, i.e., in those in whom the damage to the lower extremities is in all probability due to arteriosclerosis. After the injection there is a period of about two hours (latent period) in which the peripheral circulation is retarded. During this time thrombosis may occur. Smithwick has reported two cases in which thrombosis of the femoral artery occurred requiring amputation. Both were cases of senile arteriosclerosis. Since the plan of elevating the temperature of the extremity to 100 degrees F. by the application of blankets and hot water bottles prior to the administration of the protein was adopted there has been no appearance of thrombosis. After the latent period of two hours, during which the cyanosis may increase and the surface temperature fall, there is a chill lasting as much as thirty minutes. After four hours the mouth temperature rises to a maximum of about 103 degrees F., continues some hours and subsides to normal in six hours. During this febrile period the circulation in the peripheral vessels increases extensively and continues to remain thus active some time after the mouth tempreature has returned to normal. The extremities are drier, more normal in color and warmer. This improvement may last a week before returning to the previous level. Sometimes it reaches 15 degrees F. above the level at which it stood before the protein was administered. There are certain conditions in which repetition of this injection effects a cure, but that is aside from the subject under discussion. If the injection is to be repeated an interval of a week is advised.

Senile gangrene has not seemed to be especially benefited by operation on the sympathetic nerves. Kappis reports two groups of cases of spontaneous gangrene done by the Japanese surgeon, Osaka. In one group of thirty-six receiving periarterial sympathectomy the results were as follows: Two cases were lost to observation; three obtained lasting benefit; twenty-seven recurrences; and four failures. But in fifteen similar cases whom he treated by removal of the lumbosacral ganglia, there were twelve cured and three improved. In spite of this Schlesinger recommends that periarterial sympathectomy should be done first in this group of cases and the more radical ganglionectomy or ramisection only after the milder precedure has failed. He operated on thirty cases having intermittent claudication with good results, only three of the thirty requiring subsequent amputation. Even in diabetics he obtanied good results several times. These reports could be extended much further, but enough has been given to show that while the plan of treatment is not infallible,—I think it would be wiser to say that our ability to select the cases is not infallible,—there yet remains abundant evidence that it offers much help in the cure of endarteritis obliteraus by actual cure, by relief of pain and limping and at the worst by postponing the evil day of amputation.

The importance of surgery on the sympathetic system in Raynaud's disease is probably as great as in any lesion to which it has been applied.

Raynaud's disease is too widely and well known to require any definition or description. It is doubtful if it is recognized as early as might be in many cases, and certain that patients often do not consider it seriously in the light of a pathologic process and, therefore, do not consult their physicians until it has advanced to a considerable degree of damage. The condition is not frequent enough for laymen to have an idea of its importance. It has long been known that the recovery of fingers and toes is possible after the appearance of these digits would lead one to a hopeless prognosis and to advise amputation. Hence the importance of advice to delay amputation until it is definitely settled that the digit is hopelessly gangrenous. Numerically in Raynaud's disease probably more often than in any other single lesion surgery of the sympathetics has proven its worth. Some advice that periarterial sympathectomy should be done as the first operative step. This, at our present state of knowledge, should be advised perhaps only in those who are being handicapped or are in a way to be handicapped by the condition on account of its severity or progressiveness. For, it must be understood, that by no means all cases of Raynaud's disease progress to the stage of gangrene or even necessarily handicap the patient enough to justify surgical interference. If periarterial sympathectomy should fail to relieve the condition the advice then is to do ganglionectomy or ramisection. It is important to remember that unilateral Raynaud's is likely to be caused by definite local disturbance, such as cervical ribs and vascular pathology, for example, thrombosis, and should be dealt with accordingly.

The results obtained by Allen and Brown are very instructive. They studied one hundred forty-seven cases of uncomplicated Raynaud's disease. Of these they operated on seventeen, or twelve per cent. They thought they could have operated with advantage on a considerably larger number. The results in these seventeen cases were expressed by the word cure. However, in the group which had complications, scleroderma, chronic discoloration, trophic changes and recurrent infections these authors advise operation if the blood vessels can show sufficient dilation in response to preoperative tests. If such tests do not prove the ability of the vessels to respond and raise the temperature of the affected parts satisfactorily, neither can surgery procure such response, and is, therefore, useless. Allen and Brown had thirty-eight such cases and operated on twenty-one of them. The results in this group were not so good. Softening of the skin, improvement of the color and reduction of infections and distress were obtained; sufficient benefit to justify the operation, but certainly not enough to warrant the promise of cure.

Rowntree and Adson operated in 1927 on a case of arthritis, doing a bilateral lumbar sympathectomy. The feet, which had been cold and painful, almost immediately became warm and comfortable. Before leaving the hospital she could walk a mile and a half to two miles. They later operated for the upper extremities, removing the inferior cervical and the first and second thoracic ganglia. The results were as satisfactory as those obtained in the lower extremities. Prior to the second operation the surface temperaure of the hands had been nine degrees C. lower than that of the feet.

To illustrate the diversity of the conditions relievable by operations on the sympathetics, a case forty-six years old who had profuse and persistent sweating of the face, arm and breast was relieved by removal of two centimeters of the cord between the superior and middle cervical ganglia. Another patient twenty-one years old had extreme sweating of both hands and feet since she was twelve years old. The left rami communicantes of the eighth cervical and the first dorsal were injected with novocain. This stopped the sweating in the left hand, temporarily, of course. The rami were then severed with the result that the hand remained dry five months later.

Spastic paralysis has been relieved by sympathectomy. The theory of this relief being that muscle tonus is maintained by innervation from both voluntary and sympathetic fibers, the former giving the contractile capacity and the latter what is known as plastic tone, being maintained by the sympathetic nerves. Whether the explanation is correct or not, the fact remains that relief can be obtained.

Erythromelalgia is another condition relievable by sympathectomy, although the nature and the cause of it is not known.

There is a group of conditions which, as understood at present, presumably more or less depend for their refusal to heal on inadequate circulation, such as indolent ulcer, trophic ulcers (mal perforans), scleroderma, causalgia and delayed or non-union of fractures, in all of which the employment of sympathectomy has demonstrated its value. By this means good results have often been obtained. Some of these conditions are obviously relievable by a temporary increase in the circulation. An illustration is reported by Kappis. This case was a boy eighteen years old who came to the hospital on March 20 with a gunshot wound of the lower thigh. Numerous incisions were made on the following day. On April 6 inflammation had subsided. The wounds showed poor granulations and were not healed on July 8, in spite of every kind of effort to insure healing. There were even two skingraftings, several prolonged bandages with various materials, and a plaster cast. The wound would not heal. It measured one and a half by four centimeters. On July 8 periarterial sympathectomy was done, and on the twelfth the wound was healed. He was dismissed seven days later with a firm scar.

It is to be hoped that history will not repeat itself in this new surgery of the sympathetic system, as might be illustrated in almost every branch of surgery when it was newly developed. When aseptic technic enabled us to enter the abdomen, the ovaries were removed for various conditions with which they had no direct or indirect relation, certainly no causative relation and often with no good result; and in this group receiving no benefit there was added the inconvenience of a train of symptoms consequent upon the failure of what many consider important organs to function. Later it was found that surgery to restore the position of nephroptotic kidneys was feasible and safe; and within my memory this operation became a very common one. We did the operation often and finally abandoned it because, in the first place, it usually did no good, and, in the second, because the kidney usually did not remain put long after the nephropexy. Then it was learned the best plan was to ignore floating kidneys and say nothing to the patients about them. The results are just about as good as when nephropexy was done.

But surgery of the sympathetic nervous system presents difficulties which have not been so great in the majority of even our major operations. It is the surgery of indirection, while surgery in general has heretofore been able to attack its problems directly, as one can easily illustrate by naming over a half dozen operations. In appendicitis, in cholecystitis, in tumors, in inflammatory reactions, surgery goes directly at the pathologic process with a view to its removal or to alteration of function temporarily as in draining a cystitis; or permanently as in gastroenterostomy. It attacked the disease or the organ in which the disease appeared. In surgery of the sympathetics the situation is infinitely more complicated because the attack is more or less remote, often very remote from the affected part and does nothing toward removal of the part or mechanical alteration of its status, but attempts to alter the circulation and by increased blood flow relieve the threatening advent of a hopeless process, or to interrupt little understood nerve paths with the view of deleting their peculiar function in favor of those having antithetic action, for example, in the relief of megacolon; or by interruption of fibres carrying pain sunsation to the cerebrum, as in angina pectoris.

Another problem arises too. The sympathetic nerves and ganglia are numerous and intricate. Some of them are vitally important and their anatomy is by no means uniform. The selection of the particular cords and ganglia to be attacked to give complete relief without at the same time doing permanent or fatal damage to some vital organ will require in the more complicated regions long and exacting study before this branch of surgery can approach a stage remotely approximating the nicely standardized operations of modern general surgery. For instance, these operations are much less uniformly satisfactory in the upper than in the lower limb.

The problem of selecting the cases that can be relieved is far from final settlement. In appendicitis the case is easy. The diagnosis is made. The patient is examined physically. If his general condition is good, the uniform treatment is appendectomy, with uniformly good results. Not so in sympathetic surgery. The lesions may appear the same, but treatment is good and beneficial in one; in the other it is not. The profession must learn to distinguish between the two. The upper and lower extremities may be affected with Raynaud's disease. The lower usually gets better results than the upper. What can be done in the upper to give as good results without producing untoward conditions in other structures?

The field is new. He who would master it must restudy his anatomy, learn the physiologic function and the paths by which these functions pass, their origin and destiny; must learn the diseases which offer encouragement in this field and how to differentiate the hopeless ones from the hopeful, and proceed cautiously until he realizes the limitations of the work and patiently in order that too high a zeal may not lay this wonderful and promising field of surgery open to some of the just criticisms that might be made of other surgical advances when they too were new.

The Centennial History of the Tennessee State Medical Association 1830-1930

By Philip M. Hamer, Ph.D.

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THE JOURNAL

OF THE

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H. H. SHOULDERS, M.D., Editor and Secretary

DECEMBER, 1932

EDITORIAL

Where Do We Go From Here?

We have come to a crisis in our governmental affairs, both national and state. With this has come a crisis in business affairs. The term business is used in the broadest possible sense. In recent years there has come to be a more intimate relationship between business and government. We are at the crossroads and the question is, "Will our leaders chart their course after taking bearings from old fixed landmarks, or, will a course be followed toward an uncharted sea?"

If one asks the question, "what is the most important hindrance to the return of normal business conditions," the almost universal answer is, "high taxes."

If one asks the question, "what is the most important single step to be taken to restore normal conditions," the answer by all, except those who draw salaries from public treasuries, is, "the reduction of taxes."

Doctors, both as citizens and as professional men, in our opinion, have a serious responsibility in the present situation.

There are news items in the papers almost daily containing warnings as to the disasters which might follow if governmental activities of various sorts are reduced or dispensed with altogether. Most of these statements and warnings are made or inspired by people who draw salaries from the public treasury. Among them are statements to the effect that appropriations for public health activities must, at all hazards, be maintained, or increased, for fear of some sort of a disaster. The particular form of the disaster is not described.

None of these statements should be taken too seriously. In fact, most of them should be disregarded altogether as being propaganda—nothing more.

Most public agencies have a publicity bureau. Interviews are prepared in advance for the accommodation of the interviewer. It is the duty of the publicity department, which is sometimes called the educational department, to keep a reasonable amount of propaganda going to the public through the press at all times. By this means the public mind is moulded to coincide with the desires and wishes of the agency which draws the cash from the public treasury.

The term "public health" has taken on a very broad and loose meaning in late years. Some would define the term as meaning the same as the "health of the public." The terms are not synonymous at all insofar as state activities are concerned.

Public health departments were created for the purpose of using the police power of the state in the control of contagious diseases. They were created to deal with health problems of a public nature which an individual is powerless to deal with. These departments were created and executives were clothed with power to enforce quarantine regulations and deal with sanitary problems such as public water supplies, public food supplies, etc., in the interest of the public health.

Broadly speaking, they were designed, created and financed for the very definite purpose of dealing with the problems which affect the health of the public in a broad way and which are not amenable to the efforts of individuals singly. It is obvious that executive force is necessary to deal with these particular problems. These considerations are basic. Any attempt to broaden the activities of these public departments to where they embrace activities of an individual nature is broadening the activity far beyond any requirement of public necessity.

A great deal in the public press is said with reference to the reduction in death rate which has taken place in recent years. These statements are so phrased, in many instances, as to leave the impression that *these reductions were due entirely to the activities of these public departments.* The impression is also made that the death rate bears a definite inverse ratio to public expenditures, and if these are reduced the mortality rate will mount immediately.

None of these allegations are true. The facts are that for fifty years, or at least as far back as death records go, the death rate of the United States has diminished steadily. The reduction in the death rate has been *in proportion to advances in scientific medicine and the use of these advances by practitioners of medicine in the treatment and prevention of disease.*

For example, diphtheria was once a very important cause of death in children. When the cause of the disease was discovered and anti-toxin was developed the death rate from this disease dropped. The use of these advances and knowledge by the practitioners of medicine brought this result about.

The mortality in Tennessee from diphtheria for a period of twelve years, from 1920 to 1931, inclusive, was as follows:

1920 — 397; 1921 — 380; 1922 — 322; 1923—258; 1924—208; 1925—185; 1926—278; 1927—190; 1928—210; 1929—217; 1930—175; 1931—259.

Smallpox long ago ceased to be an important cause of death due to the discovery and perfection of smallpox vaccine and the use of it by physicians.

The mortality from typhoid fever has gone down gradually since 1898 when some very important discoveries were made with reference to the transmission of the disease and the immunization of individuals by inoculation. By the year 1920, the number of deaths in Tennessee from this cause had been reduced to 438.

The number of deaths in Tennessee from typhoid in each of the years from 1920 to 1930, inclusive, was as follows:

1921 — 612; 1922 — 495; 1923 — 517; 1924—584; 1925—639; 1926—617; 1927—521; 1928—346; 1929—307; 1930—324.

It will be observed that there were 438 deaths from this cause in 1920 and 324 in 1930, and that the number of deaths in each year fluctuated with wide variations from year to year.

It will also be noted that this is the decade in which state appropriations for health activities increased with great rapidity.

In Tennessee appropriations for public health activities increased enormously in the decade from 1920 to 1930.

In 1920 in a biennium there was spent $116,264. In 1930 the amount spent was $784,572 and in the biennium of 1931-1932 the amount appropriated was $1,215,986.13. This is to say nothing of the amount spent by municipalities, private agencies, etc.

Another example, ophthalmia neonatorum once caused many cases of blindness. Some years ago a regulation was made which required doctors to instill a silver solution in the eyes of new born babies. This practice on the part of practitioners has reduced the incidence of this disease to almost nil.

Take the tuberculosis death rate. It has been reduced but no one would claim that any one factor has measurably affected the death rate. There are many factors in the causation of the disease. For example, heredity, poverty, faulty nutrition, dissipation, etc. No public health officer anywhere could sustain the claim that any departmental activity materially affected it. The facts are that better equipped and better informed doctors are recognizing the cases earlier by methods which are relatively new. The cases are recognized in a curable state and are therefore cured. In addition, economic conditions, housing conditions, the conditions under which people live and work, all have been improved and all have had a part in the reduction of the tuberculosis death rate.

For fear some one may form the opinion that the writer of this editorial is opposed to public health activities on the part of the state I hasten to say that no one endorses more heartily than I public health activities along the lines of public necessity.

The medical profession sponsored the creation of a department of public health by the state but for a number of years the profession has been divorced from it to a large degree.

The above examples of accomplishments

display the utter futility of enormous expenditures on the part of the state carrying on various activities not based on sound public policy.

So, the public need feel no alarm concerning the disasters which might occur if appropriations for public health activities are reduced.

There is good ground for alarm on the part of the public as to what might happen if the profession of medicine should cease to carry on.

THE GREATEST POSSIBLE PROTECTION TO THE HEALTH OF THE PUBLIC IS A WELL ORGANIZED, WELL EQUIPPED, FREE PROFESSION OF MEDICINE GOVERNED BY THE CODE OF ETHICAL PRINCIPLES. This is the bulwark of public protection and when this last thought has taken hold of the public much socialistic racketeering will cease. So long as the public is guided in its conclusion by the propaganda of self-seeking representatives of agencies of various sorts the rackets will multiply until the civilization which our forefathers fought to establish has been engulfed in bureauracy from which it will be most difficult to extricate ourselves.

People are experiencing anxieties and anxiety neuroses they never had before. This is the experience of practicing physicians. These anxiety neuroses are of far greater importance to the health of the public than any vaccine or serum that any public health officer can administer.

Children growing up in a home haunted by debt and shadowed by a tax gatherer, have not the environment for childhood happiness and normal development, and no sort of hypodermic shot can correct it.

There is an alarming increase in our suicide rate. It doubled in the decade from 1920 to 1930. In fact, more deaths were due to suicide in 1930 than to diphtheria.

People at the present time are living in more crowded quarters to cut down the rent. They are skimping on food and clothing in order to be able to pay taxes. These are the factors which will affect our tuberculosis and suicide death rate unfavorably and no sort of public health activity could possibly compensate for these unfavorable effects.

If credit is given where credit is due the practitioners of medicine will receive the credit for a vast majority of the reduction in death rate that has taken place.

Let's take our bearings and chart a course which leads us back to sanity and *sound public policy.* Let's omit all public activities which are not vital to the preservation of our civilization and free institutions. Let's preserve the home, the family circle and our freedom, even at the sacrifice of some of the public services, regarded by some as essential. Let's quit following propagandists with their socialistic and communistic schemes.

Doctors, wake up and use your leadership in the direction of restoring sanity.

THE REPORTS OF THE COMMITTEE ON THE COSTS OF MEDICAL CARE

On another page of this issue of the JOURNAL will be found summaries of the three reports of the Committee on the Costs of Medical Care. Readers will carefully analyze all three of these reports.

Space will not permit of a lengthy discussion of these reports. Briefly, it may be stated that the majority report is about what was expected. The minority report is what was expected.

Before touching upon the substance of the reports it will be well to take into consideration some collateral facts. First, Dr. H. H. Moore, the director, is not a practicing physician. He is a doctor of philosophy. This fact should have a definite bearing on conclusions arrived at.

The majority report, it will be noted, is signed by those who know the least about the practice of medicine. Most of them know nothing about it except in an abstract way. They are dealing with abstract theories, but they are asking the public to place confidence in their recommendations.

The alleged purpose of the Committee was to devise a plan of practice whereby adequate medical attention would be delivered to all the people, rich and poor, at all times. To accomplish this purpose the majority report recommends the adoption of a form of collectivism, or communism, by all the communities throughout the United States. In the report they carefully avoid the use of the word "communism," but the fundamental fact is that it is communism.

As we have stated many times heretofore, if communism is applicable to medicine in America it is also applicable to business. The report should take into account this fact.

Food, clothing, and housing are all necessities. If communism is applicable to the delivery of medical service there is no reason on earth why it would not be applicable to the production and delivery of food, clothing and housing facilities.

There are also marked inconsistencies in the recommendations. It is recommended that the proper relationship between doctor and patient must be maintained, meaning by that that the patient should select his doctor. The entire committee approves this statement, but the majority report is inconsistent in that it recommends the adoption of a system which would destroy this very principle.

If a center is to be created in each community that center must have a head. We will designate him "director." If the center is financed in part by taxes then the government must of necessity have a voice in the naming of the director. The director would of necessity have the power to hire and fire the doctors and other personnel. The sick people who are serviced by the center would be compelled to accept the services of the person designated by the director. The personnel would work on a salary and would have their hours of work. No layman could for one moment dream that he would have any voice in the selection of his doctor. Then when doctors are involved in such an organization their promotion will come through political pull, not through scientific attainments. By such a step the incentives for scientific achievement are destroyed. The incentives for a good professional reputation are destroyed. By such steps scientific medicine ultimately is destroyed.

People must not lose sight of the fact that the science of medicine in the abstract is of no more value to people than any other abstract science. It becomes of value to the public through the agency of a well informed, capable, honest practitioner of medicine, motivated by the proper motives. This type of doctor with these incentives must be preserved in the public's interest. When these are destroyed no sort of system can take their place.

For the effects of communism on scientific medicine the public should read some of the stories that come out of Russia concerning the medical care given under a communistic system.

DEATHS

Dr. Joseph S. Lyon, Knoxville; Lincoln Memorial University, Medical Department, 1914; aged 51; died November 29.

NEWS NOTES AND COMMENTS

Dr. Ellis J. Huey has moved from Missouri to Martin and has opened his office in the P. & S. Drug Store.

Dr. O. E. Ballou has moved from White Pine to Clinton.

The Memphis Medical Veterans of the World War held their annual banquet November 11. More than 100 doctors belong to the Club. Memphis claims the distinction of having furnished more medical men per population during the World War than any other city in the United States.

Dr. Thomas D. Moore, of Memphis, has moved his offices to 1032 Madison Avenue. Practice limited to Urology.

Dr. L. T. Stem, of Chattanooga, is spending the winter at Nokomis, Florida.

Dr. Chas. F. Clayton has moved from Bell County, Kentucky, to Knoxville and has opened his office in the Medical Building.

Dr. E. C. Anderson, of Chattanooga, has moved his office to 414 McCallie Avenue.

Dr. O. C. Mayberry, of Knoxville, has moved his office to the Medical Arts Building.

Dr. D. J. Zimmerman has opened his office at White Pine.

Dr. H. T. Collier, of McKenzie, was confined to his home early in November. We are glad to report that he has recovered.

MEDICAL SOCIETIES

Benton, Carroll, Henry, Weakley Counties:

At the November meeting, officers were elected.

President—Dr. W. Gardner Rhea, Paris.

Vice-Presidents—

Henry County — Dr. A. F. Paschall, Puryear.

Weakley County—Dr. G. C. Thomas, Greenfield.

Carroll County—Dr. R. A. Douglas, Huntingdon.

Secretary-Treasurer — Dr. George D. Boone, Paris.

Resolutions were read for the late Dr. I. A. McSwain, of Paris, and Dr. R. M. Little, of Martin.

Campbell County:

Campbell County doctors held their regular monthly meeting the first Thursday in November. Attendance was good and program interesting.

Chester, Henderson, and Decatur Counties:

The Henderson doctors, together with several other doctors of the Tri-County Medical Society, were entertained on November 18, by the Lexington doctors in Lexington. Following the luncheon a scientific program of interest was given.

Davidson County:

November 15. "A Discussion of the Blood Supply with Particular Reference to Blood Supply in cases of Peripheral Vascular Disease," by Dr. Mont R. Reid, Professor of Surgery, University of Cincinnati.

November 22—"Agranulocytosis," by O. N. Bryan. Discussion opened by Drs. W. R. Cate and S. T. Ross.

November 29—"The Doctor's Ordeal," by Dr. Edward Plotkin.

December 6—"Acute Infectious Mononucleosis," by Dr. T. B. Zerfoss. Discussion opened by Drs. O. N. Bryan and Edna H. Tompkins.

Gibson County:

Drs. Louis Leroy and R. E. Semmes, of Memphis, and Dr. Swan Burrus, of Jackson, were the essayists at the meeting on October 31. Dr. Leroy spoke of a new malaria treatment. Dr. Semmes' address was on "Tumors of the Brain," and Dr. Burrus had a gynecological subject, illustrated with slides.

Hardin, Lawrence, Lewis, Perry, and Wayne Counties:

The following program was delivered at Hohenwald on November 29:

"Vincent's Angina," by Dr. T. J. Stockard, Lawrenceburg.

"The Simplification of the Treatment of Fractures," by Dr. J. F. Gallagher, Lawrenceburg.

"Acne," by Dr. Howard King, of Nashville.

The following officers for the year 1933 were elected:

President—Dr. F. H. Norman, Waynesboro.

Secretary-Treasurer—Dr. C. C. Stockard, Lawrenceburg.

Delegate—Dr. J. H. Tilley, Lawrenceburg.

Alternate—Dr. O. H. Williams, Savannah.

Knox County:

November 15—Dr. Henry G. Hill, of Memphis, spoke on "Treatment of Fractures of the Shaft of the Femur."

November 22—Dr. Hugh Reaves gave a paper on, "In Behalf of X-Ray Therapy."

November 29—Dr. R. G. Brashear read a paper on "Knee Injuries in the Athlete."

December 6—Dr. J. B. Neil read a paper

entitled, "An Original Method of Treatment for Prostatic Obstructions and Office Procedure Done Under Local Anesthesia, with Presentation of Cases and Lantern Slides."

December 13—Dr. E. S. Clayton read a paper on "Abdominal Drainage." Dr. Alexander opened the discussion.

December 20—Dr. John Moore.

December 25—Dr. Santa Claus.

January 3—Dr. E. G. Wood.

January 10—Dr. Glen A. Bibee.

Madison County:

Madison County held its November meeting at the New Southern Hotel. Dr. W. T. Fitts spoke on "Diagnosis and Statistical Study of Cancer of the Breast," and Dr. Jas. W. McClaren presented an essay on "Treatment and Results of Cancer of the Breast." Both papers enjoyed liberal discussion.

Roane County:

Roane County held its November meeting in the Harriman city hall, November 15. Dr. John Roberts read a paper on "Some Notes on Heart Disease." All present joined in the discussion. The December meeting will be held on the 20th, at which time officers will be elected.

Smith County:

Smith County held its November meeting in Dr. R. E. Key's office. Twelve doctors were present. Dr. J. B. Youman, of Vanderbilt, spoke on the "Diseases of the Heart." A number of other interesting addresses were made.

Sullivan-Johnson Counties:

The Sullivan-Johnson County Medical Society met on November 3. A Symposium on "Cancer of the Breast," was presented by Bristol and Kingsport doctors.

OTHER MEDICAL SOCIETIES

The Mid-South Post Graduate Medical Assembly will be held in Memphis February 14, 15, 16, 17. More than 1,000 doctors will be in attendance and plans are being made to present a program even better than in former years.

The seventy-sixth semi-annual meeting of the Middle Tennessee Medical Society was held in Columbia, November 10, 11. Dr. L. D. Allen, of Smithville, was chosen president to succeed Dr. W. A. Bryan, of Nashville. Dr. C. F. Anderson, of Nashville, was chosen Vice-President and Dr. Theo Morford, Nashville, was re-elected Secretary. The next meeting will be held in Woodbury. The program was composed of well written papers and the attendance was excellent.

Vanderbilt University Medical Society, November 4:

1. Case Reports:

(a) Meningococcus Septicemia in an Infant—Dr. W. O. Vaughan.

E. S., an 11-months-old white female, was admitted to the hospital October 19, 1932. Four days previous to admission she developed a bloody nasal discharge and high temperature. Physical findings were not sufficient to explain her acute illness. A blood culture two days after admission was positive for a gram negative diplococcus which was agglutinated by anti-meningococcus serum in a dilution of 1-160. During the next 5 days she received a total of 156 cc of serum intravenously. Following the therapy she gradually improved and was discharged November 6, 1932, well.

Case discussed by Drs. Casparis and Morgan.

(b) Secondary Syphilis With Hepatitis. —Dr. Seale Harris, Jr.

Mrs. B. K., white, female, age 17, was admitted to Vanderbilt Hospital with moderate jaundice and generalized eruption typical of secondary syphilis of 3 weeks duration. Liver enlarged and tender. Blood Wassermann positive. Abnormal glucose tolerance test. Upon the administration of very small doses of arsphenamine, the jaundice and eruption subsided and the glucose tolerance test returned to normal.

Case discussed by Dr. Morgan.

2. The Electrolyte Content of Normal and Abnormal Human Hearts. — Walter Wilkins.

Using 5 normal hearts and 8 hearts from individuals dying with congestive heart failure, it was found that the normal right ventricle contains more sodium and less potassium, phosphorus, and magnesium than the normal left ventricle; as compared with the normals, the hearts from individuals dying with congestive heart failure had gained water and sodium and lost potasium, magnesium and phosphorus in both ventricles.

Paper discussed by Drs. Robinson, Harrison and Garrey.

3. Endometrial Hyperplasia. — Drs. W. L. Williams, Harold Klingler, J. M. Wolfe and John C. Burch.

Histological characteristics of endometrial hyperplasia can be reproduced in castrated rodents by injections of estrin. Bleeding from an estrin type of endometrium is considered a manifestation of the disease known as endometrial hyperplasia. Declines in the amount of estrin available result in degeneration and bleeding. Injections of pregnancy urine stimulate the anterior hypophysis which in turn stimulates the ovary and produces estrin. Increase in estrin available causes regeneration of endometrium and stops bleeding. Luteinization of the ovary and the production of an estrin-progestin endometrium are not necessary to produce a cessation of the bleeding.

Paper discussed by Drs. Woodruff and Wolfe.

WOMAN'S AUXILIARY

President--------------Mrs. Oliver Hill, Knoxville
President-Elect-------Mrs. W. O. Floyd, Nashville
Chairman Press and Publicity
------------------Mrs. T. G. Pollard, Nashville
National President---Mrs. James Percy, California

Mrs. Walter Jackson Freeman
1868-1932

With feelings of deepest regret, the Woman's Auxiliary must record the passing of its National President, Mrs. Walter Jackson Freeman, at Philadelphia, on October 27, 1932.

Reared and developed in the environment of the highest standard of scientific medicine, her knowledge and sympathy, together with her life-long experience, gave her an intimate understanding of many problems which otherwise might have seemed insurmountable.

It has been a tribute to her that so many years deep responsibilities have been entrusted to her vision, ability and wisdom, until finally the highest honors in the power of the Auxiliary members to give, had been bestowed upon her.

Vivacious, energetic, a potent force wherever she applied her talents, she gave unselfishly to the last degree in her plans for the advancement and welfare of our organization.

Life, in its strange and mysterious way of deciding for us when the day's work is done, brought to her the glad tidings of peace and rest, leaving to other hands the task of picking up the ends left loose by her trip to the Middle Western States and her fatal illness which immediately followed. To that end, we shall, I know, all dedicate ourselves that the close of this fiscal year shall find as far as is in our power, the ideals and structure which she endeavored to build, consummated.

Through sorrow our hearts will be newly welded together. Our efforts will be strengthened with a finer unity of purpose to which each, we ask, shall pledge herself in memory of the one who is gone.

To my tasks, as her successor, I willingly devote myself and my best efforts, knowing the spirit of the Auxiliary and that the same loyal support and co-operation of the past will be vouchsafed to those officers whom she left to carry on.

"Death did not delay her capture,
Sickness loosed her thong;
Out of the pain a rapture,
Out of the dark a song."

—Mrs. James F. Percy.

Davidson County

The regular monthly meeting of the Woman's Auxiliary to the Nashville Academy of Medicine was held Friday morning, December 2. The meeting was in charge of the Philanthropic Department, Miss Elizabeth Hite, of the Davidson County Charities Commissions, was the principal speaker. She told of the needs of the Commissions, and praised the members of the Auxiliary for rendering volunteer service in doing office work, and the splendid work of the Motor Corps. Fifty garments are being made for the Red Cross and will be completed before Xmas. A number of books have been donated to the General Hospital and plans were made to provide toys for the children in the Hospital Wards at Xmas.

KNOX COUNTY

Miss Sharp, of the Nutrition Department in the City Schools, was the principal speaker at the November meeting. She spoke on Subnormal Children which is a big problem for some one to take hold of, to separate the Subnormal from the Normal and relieve the school teachers of the difficulties.

We were told of what is being done in our schools, and we hope our influence can be used to educate people of this need.

Since no chairman could be found to take hold of Hygeia, it was left to each individual to take the responsibility and to make up the quota of Knox County which was done by the Auxiliary purchasing twenty-five yearly subscriptions to be given to the schools and libraries.

At our next meeting we hope to hear the progress of the Audiometer now used in the schools, given by the Auxiliary this fall.

ABSTRACTS OF CURRENT LITERATURE

ANESTHESIA

By Hugh Barr, M.D.
Medical Arts Bldg., Nashville

Studies in Status Lymphaticus and Its Relation to Anesthetic Deaths. W. M. Kemp, M.D., Vancouver, B. C., Canada. Current Researches in Anesthesia and Analgesia, May-June, 1932.

The author discusses clinical, physiological, and pathological evidence based on postmorten findings in animals and individuals having enlarged thymus and mesenteric lymph glands. He found that there is definite evidence of relative insufficient endocrine function, especially failure of the adrenals and thyroid group which includes the parathyroid and thymus. Laboratory experiments have shown that the absence of adrenal secretion causes disfunction of both the pancreas and liver with fatal termination in which the lymphatic glands and thymus play a compensatory rôle.

In sudden death due to status lymphaticus the author disagrees with other authorities who claim that death is due to pressure of the thymus on the trachea. He believes that death is due to anoxemia from inability of the toxin-laden blood to carry oxygen and spasm of the larynx from parasympathetic preponderance. Most deaths have occurred during tonsillectomy; therefore a premium should be placed on speed. Enlarged thymus glands can be diagnosed and improved temporarily by X-ray.

The symptoms of this syndrome are as follows: Dyspnea, cyanotic attacks not of cardiac origin, intermittent suffocative spasms, laryngismus stridulus, paroxismal coughing or choking attacks, shock and collapse from seemingly insufficient cause. The shock, collapse, and death are the end results of the disturbed metabolism and autonomic nervous system due to an endocrine disfunction.

DERMATOLOGY

By E. E. Brown, M.D.
Doctors Building, Nashville

Cutaneous Sensitization to Wool. By Llewellyn Williams Lord, M.D., Baltimore, Md. Archives of Dermatology and Syphilology, October, 1932.

Four cases were reported, three of which gave positive intradermal tests. In all four of the cases there was an exacerbation of the eruption by the application of wool to the skin. One of the cases had chronic giant urticaria. He did not improve from external treatment or removal of sensitive articles from his diet. After desensitization with sheep's wool extract he remained well for five years.

The second case diagnosed as allergic eczema had existed since childhood. The positive allergic articles were removed from her diet and returned one by one after she cleared up. Shad and oysters caused an exacerbation of the eczema. Contact with horse dander produced asthma without skin reaction. Wearing of a wool cuff produced a severe reaction that required several weeks to control. She was desensitized to horse dander and wool. The eczema cleared and had remained so for one year.

The third case was an acute urticaria of six weeks' duration. Intradermal test to wool was negative. Patch test positive. Woolen blankets and wearing apparel were gotten rid of, and she cleared up.

The fourth was a case of eczema of hands, wrist, axillæ and bicubital spaces for six years. Intradermal and patch tests for wool were positive. Removal of wool and local treatment cleared her up.

OPHTHALMOLOGY

By Robert J. Warner, M.D.
Doctors Building, Nashville

Concerning the Action of Insulin on Intraocular Tension. J. Bistis. Arch. d'Opht, June, 1932.

In two diabetics the tension was taken by the author before and after the injection of insulin. In the first, with a blood sugar of 0.17, the tension increased from 20 to 25 mm. following twenty-four units of insulin. The blood sugar was reduced to 0.12. The second patient's blood sugar was 0.333. Eighteen units of insulin produced no change in intraocular tension, although the blood sugar was reduced to 0.25. The opinion was expressed that in the second case no increase in tension occurred because the blood sugar was not brought down to a low enough level to allow osmotic and colloidal changes in the eye. Warning is given to be certain that the intraocular tension of diabetics is normal before using insulin.

ORTHOPEDIC SURGERY

By Robert F. Patterson, M.D.
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Fracture of the Femur in Children. By C. F. Eikenbary, M.D., F.A.C.S., and John F. Lecocq, M.D. The Journal of Bone and Joint Surgery, October, 1932.

The authors are strongly opposed to open operation in fractured femurs, especially in children, except in certain fractures of the upper third and occasionally in other locations. They state: "We feel that we are consistent in saying that at least 90 per cent of the cases operated upon would have been infinitely better if operation had been avoided."

There is only one aim in treatment—the restoration of normal function. "Normal function should not be estimated by radiographic appearance." There are only three requisites to restoration: (1) Union; (2) normal alignment; (3) normal length. Normal apposition is desirable, but not essential.

The authors have adopted as a routine at the Children's Orthopædic Hospital the Russell's balanced traction, with most gratifying results.

Their description of the technique is as follows: "The child is placed either on a firm bed or a frame, the frame being entirely unnecessary; the frame may facilitate the handling of the patient, but it is not essential. Hospitalization is desirable, but is by no means a necessity. Under intelligent supervision, the treatment can be carried out quite well in the home. The hip is placed in a position of about twenty-five or thirty degrees of flexion, and the knee in about the same angle. Abduction or adduction may be secured as desired, merely by shifting the frame to which the pulleys and ropes are attached. English moleskin is used for traction, but the ordinary zinc-oxid adhesive may be used. The moleskin adhesive is much less irritating. The adhesive strips are carried from the malleoli to a point just *below* the knee. It is quite important that the adhesive should not extend above the knee. The two adhesive strips are fastened to a foot piece by means of buckles. In the bottom of the foot piece a pulley is secured. A sling approximately five inches wide is placed under the knee; the upper margins of the sling are tunneled for the two-tongue blades, the blades preventing wrinkling. From the center of the upper margins of the sling and going around the tongue blades, a rope is passed over a pulley attached to the frame that goes over the bed. This rope should go almost directly upward from the tibial tubercle. The rope is continued over the pulley in the top of the frame, is carried downward to the upright of the frame at a point almost opposite the foot, where it passes through another pulley, thence over the pulley in the foot piece, and back to another pulley also fastened to the upright. The weight is then attached. Usually five pounds are sufficient, but occasionally seven or ten may be necessary."

Comment: In transverse fractures of the shaft that can be locked it is much simpler and easier to apply a cast, with very little padding in the same position as that used in the Russell treatment.

PEDIATRICS

By John M. Lee, M.D.
Doctors Building, Nashville

Rickets: A New Treatment. Preliminary Report. Charles James Bloom, M.D., New Orleans, La. Southern Medical Journal, November, 1932.

Secondary calcium phosphate (dicalfos) was given as a prophylactic and curative measure for rickets. Twenty-one babies, inmates of an institution, were studied; 7 children had active rickets; 14 were given the salt prophylactically. These patients did not receive sunshine daily, but spent variable times on a covered porch in the warm months. They received no cod-liver oil or viosterol. Each baby was given from 5 to 15 grains secondary calcium phosphate daily, in the milk. The formulæ given included, (a) a mixture of Lion brand unsweetened condensed milk and a stock solution of Karo syrup and lactic acid; (b) condensed milk formulæ; (3) dried milk mixtures; (d) dilutions of cow's milk. Cereals were added at 5 months and vegetables at 6 months of age. The best results were obtained when the salt was added to the above formulæ in the order named.

The authors conclude from this study that secondary calcium phosphate when added directly to milk or milk products has prevented and cured rickets. There was a consistent increase in blood calcium and phosphorus, and the calcium-phosphorus ratio was maintained. There was marked improvement of musculature, gain in weight was constant, and no intestinal disturbances were noted.

It is suggested that the results obtained might be explained on the following points: "(1) The calcium and phosphorus content of cow's milk is not available for complete metabolism, due, perhaps, to the large amount of both of these elements which is encased in the curd. (2) It is more than likely that the p.H. of the gastric content does play a part in rickets, and that an increase in the acidity may facilitate the absorption of the calcium and phosphorus. (3) The vehicle—namely, the type of milk—must play a part in the utilization of dicalcium phosphate, judging from the results obtained in the mixtures (a) and (b). (4) The addition of secondary calcium phosphate may supply an excess of both calcium and phosphorus and thereby replace the amount of calcium and phosphorus contained in the curd, which, apparently, is not available."

Two charts recapitulate the experimental deductions in detail.

SURGERY — GENERAL AND ABDOMINAL

By John L. Dies, M.D.
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The Process of Tendon Repair. An Experimental Study of Tendon Suture and Tendon Graft. Michael L. Mason, M.D., and Clarence G. Shearon, M.D. Archives of Surgery, October, 1932, Vol. 25, pp. 615-692.

The process of tendon repair and the technic of tendon suture and tendon graft are two of the major problems of present-day surgery. The thirty-eighth session of the French Congress of Surgery, 1929, devoted considerable time to the report of Bonnet and Bloch on the repair of tendons of the hand. This, in fact, was one of the three main subjects discussed, the other two being surgical intervention in pulmonary tuberculosis and in Pott's disease. Despite many excellent experimental and clinical studies, there is little unity of opinion among students regarding any of the major issues of the problem. The actual histologic process of the repair of divided tendons and of the healing of tendon grafts, the source of the tissues that make for union between tendon stumps and between stumps and tendon graft, has been, and still is, the subject of considerable controversy. The question of spontaneous repair is by no means obviously explicable, and its experimental study has led to several logical conceptions. The significance of the synovial sheath in the process of repair led to a controversy between Bier and his pupils and Rehn and his pupils which is still being waged. The scanty vascular supply of tendon tissue and the necessity of a good vascular supply to reparative tissue are two factors that appear to be constantly working against the surgeon. The force of this fact is more strongly brought out when it is remembered that adequate vascularization of grafted tissues—e.g., a skin graft—requires rest and immobilization, with rest and immobilization of injured tendons, favor the formation of adhesions, the most important factor making for the failure of operations on tendons. Experimental and clinical obsevations have shown that function is of major importance in determining the histologic structure of tendon tissue, and emphasize the necessity for purposeful movements of tendons during the course of healing. The necessity of function would seem also to be incompatible with the immobilization necessary to obtain efficient vascularization and secure union. The tension at which tendon should be sutured is a very definite and perplexing problem. While there is no doubt that freshly divided tendon should be sutured end-to-end, after relaxation has been obtained by bringing origin and insertion of the muscle as closely together as possible, the problem is not so simple when one considers suture and repair of older injuries. Here the retraction is due not only to muscular tonus, but to intramuscular fibrosis as well; and while the former may be overcome, the latter is to a certain extent permanent, and end-to-end suture leads to permanent shortening of the tendon.

The process of healing of tendon wounds and the manner in which injuries of tendons are repaired following suture or graft have been, and still are, a matter of considerable controversy. The most controversial question has been the source of the material which forms the tendon callus, and it appears from a study of the literature that investigators have in the main attempted to show that either the tendon itself played the major rôle in healing or that the connective tissues associated with the tendon were the important sources of material. In the present experimental study carried out on the extensor carpi radialis tendon of the dog, an attempt has been made not only to ascertain the source of tendon callus, but to evaluate the parts taken by the various tissues concerned. It is shown by histologic study of healing tendon sutures that union is effected first by proliferation of the sheath tissues. This union serves to reëstablish continuity in a few days. After the fourth or fifth day the tendon itself begins to proliferate and to send cells into the callus, and, if the gap is not too great, it may be bridged by tendon cells in about two weeks. After the sheath has served its purpose of splinting the first union, it begins to become more lax and areolar and in a successful suture to take on again its original function of serving as gliding tissue. In the experiments with autogenous tendon grafts, a process of healing similar to that of sutured tendons was found to take place. The only variation between the two processes was that the sheath of the graft and the tendon of the graft remained viable and took part in the bridging of the gap between the separated stumps. From these experiments it would appear that the following practical conclusions can be drawn:

1. In tendon suture the sheath tissues, if any are present, should be as carefully approximated as the tendon, since they afford an early union which functions while the tendon itself is proliferating.
2. Accurate end-to-end apposition of tendon stumps is beneficial to healing.
3. Movements of sutured tendons may be started cautiously by the fifth or sixth day, but no force should be exerted before the third week.
4. Defects in tendons should be filled with a tendon graft plus its sheath tissues and not by fascia, since the tendon graft forms true tendon which will not tend to stretch as would ordinary connective tissue.

UROLOGY

By Tom R. Barry, M.D., F.A.C.S., and F. K. Garvey, M.D.
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Kidney Lesions as a Cause of Gastro-Intestinal Symptoms. Fletcher H. Colby. Journal of Urology, Vol. XXVIII, October, 1932.

Cecil, in 1920, reported that abdominal explorations had been done in 30 per cent of individuals with hydronephrosis.

Gastro-intestinal symptoms are frequently encountered in diseases of the urinary organs, particularly the kidneys. In many cases they are only manifestations of uremia. At other times the symptoms are obstructive as a result of large renal tumors. Such close similarity of associated symptoms of the gastro-intestinal tract to that of renal disease is explained by the fact that both are innervated by the sympathetic system.

Through the superior and inferior mesenteric ganglia the renal plexus is connected with the sympathetic nerve supply of the stomach and intestines. Direct connection of the renal plexus to other plexuxes has been demonstrated. The right kidney seems to be more closely connected to the stomach, small intestine and colon, the left kidney with the descending colon and rectum.

He reports one case whose chief complaint was vomiting, projectile in character, duration ten years. This was accompanied by abdominal distress, nausea and gas eructations. When hungry, a gnawing epigastric distress was complained of. This patient was completely relieved by the removal of a large hydronephrotic right kidney.

A second case, that of a female 40 years old, whose complaint was that of nausea, vomiting and constipation. No abdominal pain or urinary history. This patient completely relieved by diversion of an anamalous renal vessel and nephropexy.

A third case, that of abdominal pain, which was aggravated by food. No urinary symptoms. The urine in this, as in the preceding cases, was essentially negative. Removal of a moderate hydronephrosis relieved the symptoms entirely, and patient gained considerable weight.

He concludes that reflex impulses between the diseased kidney, stomach and bowel provide an explanation of the symptoms.

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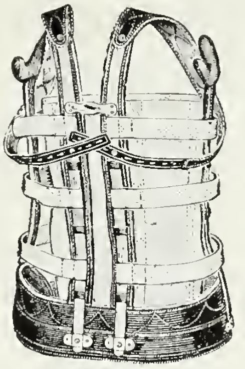

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